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EPA CHESAPEAKE BAY PROGRAM

HEARING

BEFORE THE

SUBCOMMITTEE ON
GOVERNMENTAL EFFICIENCY
AND THE DISTRICT OF COLUMBIA

OF THE

COMMITTEE ON
GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

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EPA CHESAPEAKE BAY PROGRAM

TUESDAY, MARCH 1, 1983

U.S. SENATE,
SUBCOMMITTEE ON GOVERNMENTAL EFFICIENCY AND THE DISTRICT OF COLUMBIA,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, D.C.

The subcommittee met at 9:30 a.m., in room SD-628, Dirksen Senate Office Building, Hon. Charles McC. Mathias, Jr. (chairman of the subcommittee) presiding.

Present: Senator Mathias.

Also present: Senators Stafford, Randolph, and Sarbanes; Representatives Dyson and Holt.

OPENING STATEMENT OF SENATOR MATHIAS

Senator MATHIAS. The committee will come to order, at precisely 9:30.

It is a pleasure for the committee today to have with us a member of the other body, the very distinguished Representative from Maryland, Mrs. Holt, and also, of course, my distinguished colleague, Senator Sarbanes.

We are here today to receive a report from the Chesapeake Bay Foundation on the conduct of the Environmental Protection Agency's Chesapeake Bay program. Senator Stafford, the chairman of the Environment and Public Works Committee, joined with me in requesting this report. Without objection, I will insert the text of that request in the hearing record.

[The letter referred to follows:]

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, D.C., September 30, 1982.

MR. WILLIAM C. BAKER,
Executive Director, The Chesapeake Bay Foundation,
Annapolis, Md.

DEAR MR. BAKER: In 1975, the Environmental Protection Agency was directed by the Congress to conduct a water quality research and monitoring program on the Chesapeake Bay.

The mandate to EPA in the fiscal year 1976 appropriations was:

> ". . . to assess the principal factors having an adverse impact on the environmental quality of the Chesapeake Bay, as perceived by both scientist and users, and to direct and coordinate, subsequent to a review of presently ongoing research, research and abatement programs that will most efficiently address those factors.
>
> The Committee further directs the Agency to analyze all environmental sampling data presently being collected on the Chesapeake Bay and to suggest and undertake methods for improving such data collection. The Agency is also directed to establish a continuing capability for collecting, storing, analyzing and

disseminating such data. A sampling program should be instituted where deficiencies are found to exist in present sampling programs.

Finally, the Agency should determine what units of government have management responsibility for the environmental quality of the Chesapeake Bay and define how such management responsibility can best be structured so that communication and coordination can be improved not only as between the respective units of government but also between those units and research and educational institutions, and concerned groups and individuals on the Chesapeake Bay. This final facet of the study should review not only ways to improve existing Chesapeake Bay management mechanisms, but also new alternatives which seem promising." (Senate Report 94-326)

In the same report, the Commitee went on to note:

> ". . . The Chesapeake Bay is a critically important natural and economic resource but is subject to many pressures which, if uncontrolled, will lead to the degradation of the whole Bay area. The Committee, therefore, directs the Environmental Protection Agency to conduct an in-depth study of the Chesapeake Bay, which shall also be applicable to other estuarine zones."

The EPA Bay Program is now drawing to a close. The end of this fiscal year should produce a written synthesis report on the findings of forty individual research projects. By January of next year, we expect a report on management options for the Bay.

In light of this history, we request that the Chesapeake Bay Foundation evaluate the way in which this program has been carried out by EPA. The evaluation should also consider the public participation effort, and the proposed management structure(s) for continued Bay water quality monitoring, when that document is published.

The language of the 1976 appropriations committee report and subsequent appropriation committee reports were clear in their mandate to the agency. Has the agency carried out that mandate? Are there any areas of serious lapse where the agency has not fulfilled the Congressional mandate of the program? What future role should EPA play in water quality protection of the Chesapeake Bay?

Our two Committees are contemplating hearings of the results of this EPA program in early 1983 with a view toward the national implications of the program for other estuarine zones and findings which may be relevant to the Clean Water Act reauthorization. We would, therefore, appreciate the benefit of your review by that time.

Thank you for your attention to this request.

Sincerely,

Charles McC. Mathias, Jr.,
Chairman, Subcommittee on Governmental Efficiency and the District of Columbia.
Robert T. Stafford,
Chairman, Committee on Environment and Public Works.

Senator **Mathias**. The subcommittee is anxious to determine if the congressional mandates, as spelled out in the Senate Appropriations Committee reports, have been met. We would like to know where we stand with regard to the two major work products yet to be produced: the bay characterization report and the management report. We would like to see how the agency is spending the current fiscal year's $900,000 earmark for the implementation of the program's findings.

The chairman of the Senate Committee on Environment and Public Works and the chairman of the Subcommittee on Environmental Pollution, Senator Stafford and Senator Chafee respectively, along with a great many other Members of the Congress, think that the research findings of the Chesapeake Bay program have national implications that would apply to other bodies of water. The data base and the trends identified by the program are the first comprehensive baseline against which future monitoring can be compared, and we believe that the program may point the way for strategies being discussed with the Clean Water Act reauthorization.

The Environmental Protection Agency has received—I don't know exactly what adjective to use—a large amount, an inordinate amount—of attention from the Congress in the last few months. A great deal of it has been critical. I am happy to say that today we are dealing with something different. We are dealing with one of the EPA programs which has been a noteworthy success. The EPA Chesapeake Bay program has been a shining example of good intergovernmental cooperation. It is one of the few EPA programs where the States and the agency do not find themselves as adversaries. It has fostered rapport between the public sector and many private businesses, industries and research institutions on the Bay. So we want to express our appreciation to EPA at this hearing.

The witnesses this morning are Will Baker, the executive director of the Chesapeake Bay Foundation, and Peter Bibko, the EPA Region III Administrator. So we will begin with Mr. Baker and the Foundation's report.

While Mr. Baker is taking his seat, I note the distinguished Senator from West Virginia, and Senator Randolph, long-time chairman, is here.

Mr. Baker, we will ask Senator Sarbanes to make a statement, and Mrs. Holt.

Mrs. HOLT. I have no statement, Mr. Chairman. Thank you.

OPENING STATEMENT OF SENATOR SARBANES

Senator SARBANES. Mr. Chairman, I appreciate the opportunity to join you at today's hearings on the EPA's Chesapeake Bay program. The bay program has been reviewed by the Chesapeake Bay Foundation, and I want to commend the Foundation on its very helpful review of the work accomplished so far by the bay program.

I think this hearing comes at a most opportune time in that we are at a critical juncture in the effort to preserve the water quality of this great estuary. Through the research accomplished under the bay program we now have a far greater understanding of the bay, particularly in the areas of the excess levels of nutrients and toxins, the critical impact of nitrogen on the bay, and the relationship of land use to levels of water quality degradation.

With this fine research and a greatly increased knowledge of the bay, we must now move decisively to implement sound management practices and to carry on further research. In this respect, I want to share with you and the committee my concern about the present activities of the bay program. It is most important that the EPA make every effort to bring forth the detailed management options in the management report as soon as possible. Only with these options well defined in a timely fashion can the many bay users and the States contained in the bay watershed undertake the critically important management decisions to preserve the bay's water quality and its fishery resources.

I would hope that the time for completion of the management report could be moved up to well before the end of the current fiscal year. This would allow time for the States and users to act while at the same time permit EPA and other Federal agencies the opportunity to put in place continued monitoring of and research on the bay's water quality.

The Chesapeake Bay Foundation's report underscores the most important fact that continued research is necessary. We simply cannot close down our research capability. Indeed, we must remember that only three areas of inquiry were addressed in the technical aspect of the bay program. As the Foundation has indicated, research should be undertaken on the effects of chlorine, acid rain, and altered flow characteristics. In addition, research on the levels of toxins and other pollutants in the bay should be continued with equal vigor.

Given the far greater understanding of the Chesapeake Bay achieved through the bay program, it is important that EPA's involvement in bay research not terminate. A continuing Federal involvement in the bay research program would serve many constructive purposes, and I hope appropriate legislation to accomplish this objective can be enacted.

I thank you for the chance to sit with the committee.

Senator MATHIAS. We thank you for your statement and for your continuing interest in this bay project.

We have been joined now not only by Senator Randolph but by Representative Dyson. Senator Randolph, do you have anything you would like to say?

OPENING STATEMENT OF SENATOR RANDOLPH

Senator RANDOLPH. I am grateful for the invitation to share not only as a member of your group this important panel but to keep very let's say current in connection with the programing, environmentally and otherwise, of the Chesapeake Bay area.

I may be pardoned, perhaps, for saying that I have an interest in Baltimore. I attended the Democratic National Convention there in 1912. I would like that to be on the record. [Laughter.] That was with my father, Ernest Randolph, of West Virginia, who was pledged to Woodrow Wilson. Of course, his opponent in that contest as a Democratic nomination was Jim Clarke, at that time the Speaker of the House of Representatives.

So that has no bearing on this subject, except to say that I was there a few years ago and have always returned and returned many times, riding the caboose from West Virginia, with several carloads of cattle, possibly lambs, which were to be sold on the Baltimore market in an earlier day.

So with those let's say idiosyncracies rather than prerogatives of purpose, I am going to just stick around, if I can. Thank you.

Senator MATHIAS. We are very happy to have you here. West Virginia does in fact make an important contribution to the Chesapeake Bay because some of the water that ends up in the bay comes from West Virginia. In fact, I know there are no careless citizens of Harper's Ferry, but if a careless visitor to Harper's Ferry pulls the plug on his oil tank on his car and lets that oil run down into the Potomac River at Harper's Ferry, sooner or later it ends up in the Chesapeake Bay. So we need the cooperation and the help of West Virginians as well as Marylanders and Virginians and Pennsylvanians and Delawareans in this matter.

Senator RANDOLPH. Mr. Chairman, if I could make just a further comment, since you mentioned the Potomac River. And, of course, the waters of the Shenandoah which flow into the Potomac at Harper's Ferry, we must remember it is not perhaps vital to your discussion, but the Potomac River headwaters in the State of West Virginia, and there are many people who do not know where that stream actually begins to flow eastward toward the area of Baltimore and the bay that you are discussing today. That headwaters is in Tucker County, just east of the towns of Thomas and Davis. There we, of course, have the Fairfax Stone, which you know.

I am only giving this as a background of our continuing interest and my interest, especially through the Committee on Environment and Public Works. I thank you.

Senator MATHIAS. Just as the State of West Virginia contributes to the waters of the Chesapeake Bay, Senator Randolph, as longtime chairman of the Committee on Environment and Public Works and now ranking member of the committee—and maybe some day chairman again; who knows in the fullness of time—he has contributed to the work of this project and will continue to do so.

Representative Dyson?

OPENING STATEMENT OF REPRESENTATIVE DYSON

Representative DYSON. I would only like to thank you, Senator, for the invitation to be here this morning. I think I would be remiss in not thanking you, for back in 1975, initiating this study.

My district almost totally surrounds the Chesapeake Bay. I think as time was drawing near the completion of the study there was certainly a tremendous amount of optimism in the First Congressional District that something was finally going to happen. It has sort of been tempered lately with the revelation that the disease affecting the shellfish population has become so widespread and has infected almost all of the bay. So I think it is especially critical today, Senators, that, with the EPA and the Chesapeake Bay Foundation here, maybe we could address that problem along with the runoff problem, which Mr. Bibko and I have talked about a number of times, and the role States are going to have to play in addressing that problem, which is a critical problem in the Chesapeake Bay and a considerable contributor to the degradation of the Chesapeake Bay.

Again I thank you for the opportunity to be here and again for initiating this study and both Senators from Maryland for keeping it going.

Senator MATHIAS. Thank you, Mr. Dyson. Mr. Baker?

TESTIMONY OF WILLIAM C. BAKER, EXECUTIVE DIRECTOR, THE CHESAPEAKE BAY FOUNDATION, ACCOMPANIED BY CHIP COLLINS, ASSISTANT DIRECTOR, DICK GARDNER, GENERAL COUNSEL, AND CARL OSBORNE, STAFF SCIENTIST

Mr. BAKER. Senator Mathias, Senator Sarbanes, Congresswoman Holt, Congressman Dyson, Senator Randolph: My name is Will Baker. I am the executive director of the Chesapeake Bay Foundation. With me today are Chip Collins, assistant director; Dick Gardner, our general counsel; and Carl Osborne, staff scientist.

The Chesapeake Bay Foundation is a nonprofit conservation organization with a staff of 27 environmental professionals and a membership of over 11,000 concerned citizens. Since its inception in 1966, CBF has been dedicated to insuring the wise management of the natural resources of the Chesapeake Bay. Accordingly, we have followed the Chesapeake Bay program of the U.S. Environmental Protection Agency closely, in the hope that this massive research effort will provide information and data necessary to develop and implement effective programs to restore and maintain the environmental quality of the bay. We welcome the opportunity to provide this assessment of the Chesapeake Bay program.

Senator, with your permission, I will summarize the report that has been presented to you in advance.[1]

The congressional mandate set forth a number of specific directives with respect to the technical undertakings of the EPA bay program. The following preliminary report will address the Chesapeake Bay Foundation's evaluation of EPA's performance with respect to these directives.

As time is of the essence, let me get right to the congressional mandate. The first section of the mandate directed the agency to conduct an in-depth study of the Chesapeake Bay which would be applicable to other estuaries. We believe that EPA has accomplished this.

Although characteristics of estuaries differ, the same basic processes are common to most. At least three major EPA findings have important national implications. They are:

One, nutrients and toxicants accumulate in the Chesapeake Bay. They are not flushed out on the next tide, as perhaps we believed back in 1975.

Two, nitrogen has been identified as a potential limiting nutrient for certain parts of the bay during certain times of the year.

Three, non-point-source pollution is a significant contributor to the overenrichment of Chesapeake Bay.

Let me explain each of these points in somewhat more detail.

First, the potential for the continuous accumulation of both nutrients and toxicants is now well documented. Although the chemical and physical processes are different, both the nutrients and toxicants which reach the bay tend to stay in the estuary and are taken up through biological processes. We must therefore exercise extreme caution if we are to continue to use our Nation's estuaries as waste receptacles.

Second, EPA investigated the relationship of the various chemical forms of nitrogen and phosphorus to the problem of excessive algal growth. Nitrogen is now known to be a potential controlling factor for summertime phytoplankton populations in much of the Chesapeake.

This finding implies that some form of both nitrogen and phosphorus control will be necessary if we are to protect estuarine resources. Presently, however, EPA itself does not recognize the necessity of this important control strategy.

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[1] See p. 25.

As recently as January 1983, the agency released an environmental impact statement for the Patuxent River which stated: "The information and studies performed to date do not provide an adequate technical basis to support nitrogen control in addition to phosphorus control." By ignoring the impacts of nitrogen loadings, EPA's region III is apparently overlooking a major conclusion of the Chesapeake Bay program. We wonder what is the point of spending $27 million if the findings are to be ignored.

Finally, the coupling of land-use practices to the degradation of estuaries is now documented. For instance, 50 to 55 percent of the total nitrogen loadings to the estuary are from nonpoint sources. The equivalent figure for phosphorus is 30 to 34 percent annually; significant amounts. Clearly we will not be able to manage our estuarine-based resources until we can effectively manage our land resources. What happens on land directly affects the water.

The second directive of Congress to the agency required that EPA assess the principal factors adversely affecting the Chesapeake Bay. This task has been a difficult one. Initially 10 factors were identified as worthy of investigation. Given the limited fiscal resources made available to the program, that list was narrowed to three factors as a result of a consensus reached by the program and area scientists. Those three factors were nutrient enrichment, toxic chemical pollution, and the decline of submerged aquatic vegetation.

We believe that the approach taken by the program, targeting these three specific factors, was justified on the basis of available technical and fiscal resources. This approach, while not supplying answers to every question, did add considerably to our understanding of the estuary.

One cautionary note, however: We should not take the findings of the program as the final word. This is especially true with toxic contaminants. For instance, although EPA research as shown that a number of areas have dangerously elevated levels of toxicants present, we cannot yet draw concrete correlations between these levels and the effects upon the biological resources of the Chesapeake Bay. Too little is known on subjects such as the long-term effects of chronic exposure to particular compounds or the synergistic effects that a combination of substances may exhibit. For this reason, expanded monitoring and continued research is necessary.

The third directive required the EPA to review existing research and analyze existing data pertaining to the Chesapeake Bay. Again, regarding this part of the mandate, EPA appears to have done an adequate job. The relative success of this review effort was due in large measure to the program's use of the region's major research institutions as cooperative partners in the technical studies. To our knowledge, no significant research programs were overlooked. In addition to the program's review of ongoing research, historical data were compiled, edited, and stored by the program. Literature, published and unpublished, and monitoring data from State and local governments as well as private industry are presently in the program's computer files. That data base will be an extremely valuable tool in any attempt to monitor long-term trends in the estuary.

This concludes the section of our report which deals with the technical findings of the bay program. In essence, to be overly simplistic, perhaps, Congress asked EPA to look into what was the matter with the bay and then to tell us how we can fix it.

The second section of our report evaluates EPA's effort to produce management recommendations for the bay. It is, unfortunately, a brief chapter. Let me explain.

The congressional mandate required EPA to investigate and develop management and institutional recommendations designed to improve water quality and pollution abatement programs on the bay. These directives, which bear directly on future management, have not been fully addressed to date. They include:

One, the establishment of a continuing capability for collecting, storing, analyzing, and disseminating data related to the bay and its management.

Two, the review of ways to improve existing management mechanisms.

Three, the direction and coordination of an abatement program that will address those factors adversely affecting the Chesapeake Bay.

CBF has reviewed the only preliminary draft of the management report, and we have submitted detailed comments to EPA. We did not give it high marks. However, we are guardedly optimistic that the agency is moving toward the completion of an adequate work product, to be finished on or before September 30, 1983. Our optimism is based on: One, the fact that sufficient funds have been allocated by Congress to complete the task, the $900,000 which perhaps was not intended for completing the work but to go forward with implementation; two, in interviews with the program staff we have been assured that our comments and suggestions pertaining to the first draft will be addressed in future drafts; and three, the States are working together on the management committee. They have demonstrated a commitment to the production of a thorough and usable management report. This is extremely important.

CBF endorses the concept of a management committee. We feel that it is the proper mechanism for oversight from EPA, the participating States and the citizen representatives. We believe that its contribution has been significant, although it was instituted too late. In future efforts such as this, a management committee should be in place at the outset. In addition, it should have clearly defined goals and responsibilities.

And now to the third section of our report, which evaluates the public participation effort.

In 1977, 2 years after the start of the program, EPA initiated that effort when it subcontracted the work to the Citizen's Program for the Chesapeake Bay, CPCB, a private, nonprofit organization.

EPA provided CPCB with the following set of guidelines: one, to disseminate educational materials to bay users and the general public concerning the Chesapeake Bay program; two, to provide an opportunity for bay users and others affected by water quality planning and management programs to state their interests; and three, to develop an opportunity for a representative body of bay users to effectively participate in the EPA decisionmaking process.

Until 1980, most of CBCF's work was directed toward education of the public about the program. During this time CPCB concentrated on producing printed materials and visual displays, fact sheets, newsletters, posters, information flyers, and the like. In addition, several TV productions, and radio public service announcements and a feature-length movie were also produced and distributed.

In 1981, however, a shift occurred to place greater emphasis on the involvement of the bay user groups. During this time, and particularly in the last year, the effort to continue to educate the general public was gradually scaled down and finally reduced to a small fraction of the former effort. This shift can be attributed to two factors: one, a belief on the part of CPCB that a more direct effort had to be targeted at the resource user groups to successfully involve them; and two, particularly in the last year, the fact that funding was reduced to the point where only a bare budget program could be carried forward. As a result, when the synthesis report, the technical findings, was released in September, the CPCB could only provide limited distribution of these to the public.

The 1981 effort to increase the involvement of bay user groups was refined and expanded principally through the formation of the resource users management team. This body, composed of representatives from agriculture, State and Federal agencies, watermen's interests, private industry, and environmental groups, actively participated in the review of the EPA data and research. During this time, the program successfully involved representatives of the agricultural community and the State of Pennsylvania through expanded field trips, forums, and workshops.

The guidelines that EPA established for this aspect of the public participation effort sought to provide opportunities for bay users to state their interests, to translate their needs into management programs, and to effectively participate in the bay program. In the latter stages of the EPA effort, in CBF's opinion, this effort had been largely successful. Unfortunately, in the early years, when much of the future direction and scope of the research was being determined, there was little effort to encourage this type of participation among bay user groups. Earlier development of this phase could have resulted in a stronger bond between the agency and the public.

It is difficult to assess a public education effort, public participation effort, the success of which depends not simply on the quality and quantity of tangible products, such as presentations and publications, but also on the effect upon and response of the targeted audiences. In our opinion, the public education effort under the EPA Chesapeake Bay program was largely successful and public awareness and concern for the bay and its health have been enhanced.

We salute Fran Flanigan, the director of the public participation program, for the tremendous job that she has done. With the benefit of hindsight, however, we recommend that in future efforts of this type adequate funding be retained until the end of the project to assure widespread dissemination of the results to the general public.

At this point I would like to call again on that 20/20 hindsight to make a general observation about the program. It pertains to the initial attempt by EPA to run the program out of the Philadelphia region III office, an extremely costly mistake in terms of both dollars spent and time lost. We are still paying for the time which was lost—the program, at least 2 years overdue, is still incomplete—and we will never, of course, recoup the lost dollars.

The program was simply not fully operational until a full-time administrative staff was hired, whose responsibilities rested solely with the program and until that staff was centralized in the Annapolis office. During the years that Tudor Davies and Tom DeMoss ran the program, we felt it was superbly administered. In light of this, it seems incredible that on October 1, 1982, after Tudor Davies and Tom DeMoss had left, EPA region III recommended moving administrative authority for the program back to Philadelphia. That was done, and confusion and ineffective management resulted.

Eventually, after several weeks of this, much of the administrative responsibility was returned to the Annapolis office, and Virginia Tippie was named Director, or so we thought. We have just learned that Miss Tippie's title is not Director but Senior Technical Advisor. The problem here is more than just one of semantics.

In future programs of this type we believe that the administrative responsibility should rest with a full-time, onsite staff. The vesting of such administrative authority in EPA officials who are not working fulltime on the project is counterproductive.

In conclusion, we believe that the ultimate success of the EPA Chesapeake Bay program will depend on whether implementation of the forthcoming control strategies and other management recommendations will reverse the trend toward environmental degradation of the Chesapeake Bay. Translating EPA's recommendations into action will require the commitment of all parties—Federal, State, and local government, bay users, and the general public.

CBF believes, however, that certain steps can now be undertaken in response to EPA's technical findings and in anticipation of the completion of the management report. The Patuxent River plan is a good example of a strong, effective pollution control strategy that must be implemented. Furthermore, we recommend the establishment of an Office of Bay Liaison and enactment of Federal legislation to provide Federal funds for future research and implementation of the bay program findings.

The Office of Chesapeake Bay Liaison should be an entity established before the end of fiscal year 1983 that will continue the cooperative efforts of managing the Chesapeake Bay which have been established by the States of Virginia, Maryland, Pennsylvania, and the Federal Government over the past 6 years. In addition, it will allow for a smooth transition of information, computer capability, data collection, and monitoring resources to the States.

Although the office should be largely autonomous to insure its political nature, the States and the Federal Government will be paying for it and will be the direct recipients of its services. We therefore propose that a board of directors with oversight and advisory responsibilities be created.

The composition of this board should include representatives from EPA and the States, citizen representatives, and members of the academic or research community.

This office would not, we emphasize, be the permanent management institution which may eventually evolve. Its purpose and objective would simply be to insure the continuity of the ongoing work and to enable the smooth transition to the implementation phase of the EPA Chesapeake Bay program.

Regarding enactment of Federal legislation addressing the Chesapeake Bay, Senator Chafee has introduced S. 431 entitled the Clean Water Act Amendments of 1983. This bill provides the foundation for strong Federal support for implementing an interstate management plan for the bay and for continuing the research activities of the Chesapeake Bay program.

For this report, we have identified areas in which additional or continued research would increase our scientific understanding of the estuary; for example, the long-term effects of toxicants. Carrying forward the scientific research is a necessary complement to implementation of the bay program findings.

We also believe that additional federal involvement in bay management from agencies such as Interior, Commerce, Agriculture and, of course, EPA is absolutely essential if we are to undertake seriously the task of restoring the health of the Chesapeake Bay. Controlling nutrient inputs from rural and urban runoff, upgrading sewage treatment plants, and eliminating toxic contamination will be an enormous and expensive job. We believe that the states share a strong sense of commitment, but their technical and financial resources are limited. The Chesapeake Bay is a national resource, a national treasure, and we believe that the Federal Government must play a strong and major role in the effort to save the bay.

Thank you all.

Senator MATHIAS. Thank you, Mr. Baker.

While Senator Randolph is here, let me ask you this question: Should the States which are within the Chesapeake Bay drainage area, other than Maryland, Virginia, Pennsylvania, and the District of Columbia, play some role in the bay management program?

Mr. BAKER. Yes, sir. The challenge of having Maryland, the District of Columbia, Virginia, and Pennsylvania work together as they have never done before is substantial. But it would seem wrong at this time, at the outset of being on the verge of a real watershed management plan for the Chesapeake Bay, to not include in at least some way West Virginia, New York, in whatever action is carried forward.

Senator MATHIAS. Senator Randolph, would you like to comment on that?

Senator RANDOLPH. Thank you, Mr. Chairman.

I am coming back now to the substance, which, of course, I did not address myself to in the extraneous remarks at the beginning of your important hearing. I do want to have the record indicate that I know of your leadership in this matter and also the leadership of Senator Sarbanes. I understand the concerns of Representatives Holt and Dyson and many other Members of the Senate and the House of Representatives.

I had earlier mentioned, just in passing, that the Potomac River rises, begins in Tucker County, W. Va. I was referring to the north branch of the Potomac River, as the chairman knows. The south branch of the Potomac River rises in Pocahontas County, some distance away, as you would understand, that county being the mother, frankly, of many rivers.

I also want to comment on the very excellent documentation of matters by Mr. Baker. I do want, Mr. Baker, for you to know that—it is not too important, but the record should be correct—I have cosponsored that legislation with Senator Chafee. So my name is on the measure. That is S. 431. Senator Chafee is the chairman of our Environmental Pollution Subcommittee.

That legislation goes to the heart of the Clean Water Act amendments. We have certain provisions that we hope may support the implementation of the interstate management plan for the Chesapeake Bay.

I do think, Mr. Chairman, those of you who are here conducting the hearing, that there may be reason for you to bring to us certain amendments that would be considered in the Environment and Public Works Committee that could well be included in the bill reported from our committee. I think this is an opportunity for cooperation between the committee of which I am a member and those of you who are working particularly on this subject.

I don't want to underestimate or overestimate the importance of what I call speedy action, but I do think that we have at this time a very challenging commitment, and that is to move more quickly than to move less quickly. I just hope that in the work that you are doing here you will know, all of you, of the very strong support that we have in our committee, as indicated by the joint sponsorship of Senator Chafee and myself in reference to S. 431.

I thank you very much.

Senator MATHIAS. I certainly welcome what you have said and the offer that you have made. I hope that we can act on it very promptly.

Senator RANDOLPH. Thank you, Senator.

Senator MATHIAS. Returning to your statement, Mr. Baker, how do you foresee a continuing federal presence? You have talked about a bay liaison. What kind of federal actors would be involved in that program?

Mr. BAKER. I believe that the most appropriate place for the Federal actors in the Office of Bay Liaison would be in the so-called board of directors that would oversee the actions of that office. I believe that Federal agencies such as Interior, Commerce, Agriculture, and EPA should be represented on that board. That is one aspect.

In terms of a continuing Federal presence on Chesapeake Bay, all of those agencies have the capability to put management of the Chesapeake Bay as a high priority on their agendas, and we would encourage that and think it highly appropriate. In addition, the availability of Federal funds to the States for implementation is a continuing aspect of Federal action for Chesapeake Bay.

Senator MATHIAS. What would be the size of such an agency? How many people would be involved?

Mr. **Baker**. We feel that the staffing of the office could be accomplished with between 5 and 10 individuals. The budget, as we see it, would be $500,000, which would be adequate. Of that, we think that the Federal Government should contribute 50 percent, the State of Maryland 20 percent, Virginia 20 percent, and Pennsylvania 10 percent. On the board of directors, if you will——

Senator **Mathias**. You have thought about this somewhat precisely, I see. [Laughter.]

Mr. **Baker**. Yes, sir. On the board of directors, we think somewhere in the neighborhood of 8 to 12 individuals would be appropriate; certainly no more than that.

Senator **Mathias**. What are your thoughts about the direction that the agency and the States should take after September 30 in terms of maintaining the bay program data base and the monitoring of water quality and the implementation of clean water strategies?

Mr. **Baker**. We have reviewed preliminary documents coming out of the EPA bay program office on those subjects. However, we do not yet know exactly what form the recommendations of the EPA program will take in terms of monitoring, data collection, and that sort of thing. However, we think they are moving toward a workable plan for an ongoing monitoring program, and certainly the data collection and retention capabilities that they have in place now are quite adequate.

In addition, we think that the implementation of the program findings will be largely a responsibility of the States, but without the prodding by EPA and an effort by EPA to keep the States working together, that effort will not be as effective as it might be.

Senator **Mathias**. From the work products that you have seen, do you believe that the program has clearly identified the causes of decline in rockfish and oysters?

Mr. **Baker**. No, sir. We haven't seen those work products yet. That correlation may well be contained in the characterization report, but that has not been fully completed and we would not comment on it at that time. We haven't seen that correlation made yet.

Senator **Mathias**. You know the old saying, speak of the angels and you hear the flutter of their wings. [Laughter.] Senator Stafford, the chairman of the Environmental Committee, has just arrived, a man who has a deep personal interest in the Chesapeake Bay in that he spends a good deal of time on it and probably knows more about it than a great many native Marylanders. So we are delighted to have him here today.

Senator **Stafford**. Thank you very much, Senator Mathias. It is a real pleasure to be here. You are correct, I do have a dual interest in the bay. For the last 22 years I have enjoyed researching the fishing there from my own boat and sampling the water and its state as far as I could by swimming in it. Then I am Chairman of the Environment and Public Works Committee, which has a major interest in all environmental matters.

Mr. Chairman, I have a very brief statement that I will either read or put in the record, whichever suits your convenience.

Senator **Mathias**. Whichever you wish to do, sir.

Senator STAFFORD. Why don't I read it then. It won't take more than a couple minutes. We Yankees aren't very long winded. [Laughter.]

The purpose of this hearing today, as I understand it——

Senator MATHIAS. We don't mind if you are long winded as long as you are not tight fisted. [Laughter.]

Senator STAFFORD. Well, you know, where I come from, we believe in using it up, making it do and wearing it out. [Laughter.] You can't tell, I may be both.

OPENING STATEMENT OF SENATOR STAFFORD

Senator STAFFORD. As I understand the purpose of this hearing, it is to receive testimony concerning the progress of the Chesapeake Bay program and future plans for implementation of program study findings. As we have said, my interest in these proceedings stems from my dual association with the bay program as chairman of the Committee on Environment and Public Works, which has provided support for the Environmental Protection Agency's research activities, and as a Chesapeake Bay sailing enthusiast. I know that I share a deep concern with many other citizens over the degradation that has occurred in the bay, despite Clean Water Act provisions.

I understand that as a result of a 7-year research effort, EPA now has extensive knowledge of the causes of bay pollution. The management report, to be completed by September, will identify the major pollutants, their sources, and appropriate management strategies.

It is essential that these findings be put to sound use through the implementation of a multistate management plan. The public funds provided to establish a scientific basis for this planning effort will have been spent wisely when this is accomplished. I will support an amendment to the Clean Water Act which would make funds available for these water quality management activities within the bay area.

I believe that the importance of the bay program lies not only in the restoration and protection of this particular national treasure but also as a demonstration of effective intergovernmental resource management. The success of future pollution control efforts depends on the productive coordination of numerous government entities involved with water quality concerns in the bay area and the implementation of both point and nonpoint source management strategies to achieve water quality objectives. I can assure you, Mr. Chairman, that the progress achieved through the bay program will be of continuing interest to me, to the Environment and Public Works Committee, and the other Members of Congress.

I noted, Mr. Chairman, you were commenting on or asking a question about the shellfish in the bay. I have noticed personally, and it may be due to lack of skill on my part as a fisherman, that there has been a marked dropoff in the catching of both bass, stripers, and bluefish in the last 2 or 3 years, so marked a one that even my ineffective fishing can't account for all of it. So I know that for some reason or other we are getting a lot less fish out there than we were say 3 years ago.

Senator **Mathias**. We are sorry to get that pessimistic report on rock and other fish, but we are glad that we have the chairman of the Environmental Committee interested in that personal way in the subject. I think that is the most hopeful sign, that there is likely to be some improvement, if it is within the capacity of man to improve.

Senator **Stafford**. That is a reasonable assumption I think. I was about to say, Mr. Chairman, the only rock I have seen out there lately is the one I almost rammed last summer. [Laughter.]

Senator **Mathias**. While you are here, I want to raise one question. I want to give some time to Senator Sarbanes and Representative Dyson.

Section 117 of S. 431, the Clean Water Act reauthorization, establishes a 55-percent cost-sharing EPA grant for Chesapeake Bay management/implementation by States affected by the interstate management plan developed pursuant to the Chesapeake Bay Program. I was going to ask Mr. Baker to comment on this provision with respect to a continuing presence on the bay and the sort of carrots-and-stick approach to insure that the States, the States around the bay, commit themselves to bay water quality standards and management strategies which would prevent further degradation of the bay.

Now subsection (c) mandates EPA to continue to assess the relationship between point and nonpoint source pollution and the impact of such pollution on water quality and to do further research on the impact of pollutant loadings, particularly nutrients, on the fisheries resource of the bay. Special attention, Mr. Chairman, shall be given to the striped bass. So this is a matter that is before the Environment and Public Works Committee at this very moment.

Would you comment on that, Mr. Baker?

Mr. **Baker**. My only comment would be that it seems to be proper to tie the allocation of the funds toward a commitment by the States to work toward the management plan, to have adopted and be working toward that management plan. It underscores the need for a management plan to be developed, however. We do not have that yet and we must work toward that immediately.

Senator **Mathias**. Would it be better to specify the nutrients to be investigated and to set aside some line-item sums for research on those particular nutrients?

Mr. **Baker**. I am not familiar with it. I believe that the $3 million a year was specifically set aside for research and the $10 million was set aside for implementation of some of the findings. It appears to us at this time that the way it is written, with the $3 million set aside for research, that is adequate. Am I missing something on it?

Senator **Mathias**. Well, the proposed legislation merely refers to nutrients. It doesn't specify the type of nutrients, as to whether one may be more troublesome.

Mr. **Baker**. I see. You are relating to the discussion as to whether nitrogen or phosphorus is the limiting nutrient?

Senator **Mathias**. Yes.

Mr. **Baker**. That would not be a concern of ours, no. That is a control strategy question. But in terms of future research, research into the overall effect of nutrients, and toxicants on the bay would be adequate.

Senator **MATHIAS**. Having in mind Senator Stafford's comment on the fisheries, what about the relationship between point and nonpoint sources of pollution? Should that be a priority?

Mr. **BAKER**. Absolutely. There must be high priority given to investigating the problems associated with nonpoint source pollution. If we have learned anything from the EPA Chesapeake Bay program, we have learned that nonpoint sources are a significant contributor to the decline of the Chesapeake Bay. However, we have consistently emphasized that we can't let the pendulum swing too far in the other direction and focus our attention solely on nonpoint sources. There is still a tremendous loading in the Chesapeake Bay coming from point source loads, and we must continue to keep emphasis and attention on that part of the problem as well.

Senator **MATHIAS**. Senator Sarbanes, do you have questions?

Senator **SARBANES**. Thank you, Mr. Chairman.

First I want to commend Mr. Baker and his associates in the Chesapeake Bay Foundation for not only their study and report but generally their effective work with respect to the bay and other environmental problems.

To put a hypothetical to you, if you had the power to set out exactly how you wanted things now to move with respect to addressing the problem of the degradation of the bay, step by step, what would it be?

Mr. **BAKER**. That is not an easy question, sir. We believe that the strategy or the structure, the process by which the present EPA bay program staff is moving to produce characterization and management reports is the best we can do now to get those out on the time line. We would like to push them up and get them sooner, but to get the quality, we think the time line they have provided us with is the only realistic one.

Senator **SARBANES**. What do you understand that time line to be?

Mr. **BAKER**. The next draft of the management report should be out any day now. It will be finalized by August. The finalization of the characterization report I believe will be approximately June or July.

This will allow the States to have that information at hand when they start to prepare their fiscal 1985 budgets.

One of the important things is to allow this information to filter down through the State bureaucracies to the people who are going to be involved in directly implementing the programs, to determine what sort of costs are involved, how effective they will be, how they pertain to site-specific areas on the Chesapeake Bay, and that sort of thing. Implementation is not going to be automatic. That is one of the reasons why we think this office of bay liaison is so necessary, to carry us from October 1, 1983, through the period of time when implementation will occur. You are not going to have implementation of the bay program findings on October 1, as soon as the program is officially over.

Senator **SARBANES**. What then beyond that? We get the reports, or the studies, the characterization and the management studies in. You want this office of bay liaison to coordinate and help to put in place an implementation strategy; is that correct?

Mr. **Baker**. Yes, sir; and to keep the States and the Federal Government working together. At a recent management committee meeting, one of the Maryland officials turned to Mr. Bibko and said, "It is imperative that you continue"—you, EPA—"continue to be involved after September 30 so we"—the States—"will have an incentive to continue to work together and so that you can help keep us together."

It would be all too easy for the States come October 1 to try and get parts of Federal moneys and to go their own separate ways without coordination. The office of bay liaison can provide that coordination, in addition to continuing the bay-wide monitoring programs, the bay-wide data collection, storage and dissemination programs, and that sort of thing. If it is left up to the individual States, we do not feel it would be as effective.

Senator **Sarbanes**. Would that office continue the updating of the research?

Mr. **Baker**. It would not be responsible for doing the research, but it would be responsible for continuing to update the data base, the computer files, and to use continuing research, which is funded by all sorts of different sources, and incorporate that into their research pool which would be used by the various States.

Senator **Sarbanes**. What about the public involvement in education? How does that process go on? Is that simply going to come to a halt?

Mr. **Baker**. No. That is a good question. We think that one of the staff people in the office of bay liaison should be a public education officer, public participation coordinator, or at least that should be part of the responsibilities of one of the staff persons, so that the fine work that has been started with the various user groups, the watermen, the industrial groups, the environmental organizations, the research community, can be continued.

The types of bodies that have been set up, like the resource user management team, are a very valuable tool toward helping involve the public in this sort of decisionmaking process.

Senator **Sarbanes**. Do you understand that the management report of the EPA will address these questions that we are talking about here, that you have sought to address with an office of bay liaison, or will there be a blank, as it were, in their management report?

Mr. **Baker**. We have certainly urged them to address it and we hope that they will, but I cannot comment on what I haven't seen yet.

Senator **Sarbanes**. If they are not addressed, isn't there a great danger that a tremendous amount of effort, expenditure of money, and from what you say in evaluating it a technical product of substance and quality, there will be a great danger that they are simply going to sit on the shelf, unless there is a great deal of thought given to an ongoing institutional arrangement that will utilize this data and implement the strategy on a continuing basis?

Mr. **Baker**. Precisely. That is what we were fearful would happen last October 1 when the administrative authority was transferred up to Philadelphia, and we urged at that time continuing work and continuing initiatives that had been started, so that the findings would be used and the money would be well spent.

We see the same possibility happening this October 1. We think that the bay office would go a long way toward solving that problem.

Senator **Sarbanes**. Is it your perception that the EPA's effectiveness in implementing this program is very closely correlated with the people placed in charge of the program?

I gather to some extent it is located in Annapolis rather than the regional office. Is that right? Are those two things interrelated as you perceive it?

Mr. **Baker**. Yes, it is. The point is not to borrow people that have other responsibilities and say, "Your responsibilities will now include this Chesapeake Bay effort." It should be full-time, onsite staff.

Senator **Sarbanes**. In the instances when that has been the case, as the EPA has carried out these studies, it is generally your view that it has worked pretty well; is that right?

Mr. **Baker**. Yes, sir.

Senator **Sarbanes**. In the instances when it has been, as it were, relegated to an additional or secondary responsibility, it is your perception the studies have not moved very well; is that correct?

Mr. **Baker**. Yes, sir.

Senator **Sarbanes**. Thank you.

Senator **Mathias**. Thank you, Senator Sarbanes.

Senator Stafford?

Senator **Stafford**. Thank you very much, Mr. Chairman. I don't have any questions at this particular time.

Senator **Mathias**. Representative Dyson?

Representative **Dyson**. Thank you, Mr. Chairman.

As you know, the National Marine Fisheries Service wanted to close a primary research facility in the Chesapeake Bay region. That is the Oxford Lab, which does research on the rockfish or, as it is called everywhere else in the world, the striped bass. Our committee has recommended that that remain open and continue that research.

The question I have I guess is a very direct one. You are just a few feet down from the Maryland General Assembly, which is meeting now. You have come forth with a lot of comments on this whole bay study that Senator Mathias was instrumental in initiating back in 1975.

My question to you is what recommendations did you make to the various State general assemblies involved with the Chesapeake Bay?

The reason I ask that is that you indicate that many of the contaminants entering the bay are readily flushed out. I was surprised at the results of this study, that they were not. You indicate that in fact less than 1 percent are actually flushed out of the bay. I can just imagine the picture of that constant accumulation of years and years.

I think you also seem to be critical of the study in the EPA, of ignoring the impact of nitrogen loadings, which was your wording, especially from nonpoint sources, because what happens on the land directly affects the water. In fact, as you indicate on page 7, the bay is tied to 64,000 square miles of land. Nonpoint sources of pollution, are the Eastern Shore, which is a very agricultural region, and the areas surrounding the Susquehanna, starting in New York and down through Pennsylvania, another highly agricultural region, and the Virginia rivers that feed into the Bay going back as far as West Virginia.

I know as a former member of the Maryland General Assembly and now a member of Congress no one has really wanted to look at that issue straight in the eye. The Virginia General Assembly has packed its bags and has gone home, and Maryland is going to do that shortly.

Did you make any recommendations about those nonpoint sources of pollution? Because regardless of whether EPA continues to be involved in as a bay liaison office, those individual States are going to have to address this problem, regardless of what is recommended or what the Federal Government has done.

Senator MATHIAS. Before Mr. Baker responds to that question, there is a vote on, a roll call vote on the Senate floor. I would suggest that Representative Dyson continue his questions. Members of the Senate can go vote. If you run out of questions before we get back, the committee will take a short recess.

Representative DYSON. I have pages and pages of comments, here, so I guess not. Thank you.

Mr. BAKER. Congressman, we were very pleased to see that both Governor Robb and Governor Hughes expressed a strong concern to, in their words, save the bay. Governor Hughes was able to back up that statement with a $750,000 additional allocation of funds in his budget for programs specifically related to Chesapeake Bay, many of them in the area of nonpoint source pollution control. We have worked with the appropriate House and Senate committees and made our views known regarding the value of keeping that money in the budget. We are very concerned at this point, however, to see that the $750,000 is on a so-called hit list. We are worried, in fact, about that effort to cut that money.

Governor Hughes and the State of Maryland, the Maryland General Assembly, have the opportunity to seize the initiative and put their money behind their words and go forward with a strong implementation program that we hope and we believe will be matched with Federal moneys. If that money is cut, so much of what has been accomplished in the last 6 years will be lost.

I can get into some of the specific areas in terms of sediment control and storm water management and the Patuxent River plan, which deals specifically with nonpoint source pollution. But the central issue in the Maryland General Assembly right now is keeping that $750,000 intact.

Representative DYSON [presiding]. I think when we use those large figures it is very impressive. I was instrumental in getting the $900,000 for the implementation of this Chesapeake Bay study. I, quite frankly, don't know where the money has gone now. I am not terribly impressed at the implementation of the study.

Now, I have talked to the Administrator here many times. I am more impressed now than I was before. But what does the $750,000 mean?

Like I said in my opening remarks, when this study was nearing completion, there was tremendous optimism in my district that something was happening in the bay. The last couple of weeks it has just been devastating what we have been reading about the shellfish populations and everything else.

I go back to this nonpoint source pollution because I remember I was a member of the environmental matters committee in Annapolis. That was the issue then. Here we are 10 years later and it is still the issue. Of course, we now have a $27 million study. We have $750,000 that is on line to be cut. Don't we know what we need to do?

Mr. **Baker**. Yes, sir, we feel that we do. We feel that that $750,000 is going to be directly put into programs working with the findings to do something to clean up the bay, agricultural cost sharing, storm water management, and that sort of thing.

It is discouraging to think back to 10 years ago when we talked about nonpoint source pollution and that was a problem and now we are saying a revelation, nonpoint source pollution is a problem. I understand that issue there——

Representative **Dyson**. When did that revelation come about?

Mr. **Baker**. When did it come about?

Representative **Dyson**. Yes.

Mr. **Baker**. I was using that——

Representative **Dyson**. When it hit them and hit me and everybody else.

Mr. **Baker**. What the bay program has done is that they have quantified the loadings from nonpoint source pollution. They have said that 50 to 55 percent of the nitrogen entering the bay comes from nonpoint sources; and in the Susquehanna, it is here; in the Patuxent, it is there. On the James River the greater control strategies would be toward controlling point sources.

So it has looked into the bay, site specifically, and said how much is coming from where rather than just wringing our hands and saying nonpoint source pollution is a problem, without having an effective or knowledgeable way to go about where you would control it, where you need to place your emphasis and where you don't.

Our knowledge has been greatly increased in those aspects, quantities and specific sources. You are absolutely right, though, 10 years ago we knew it was a problem, but we just didn't know how big a problem it was.

Representative **Dyson**. Your liaison office recommendation, if such a thing were to come about, would it be able to move Maryland, Virginia, Pennsylvania, New York, West Virginia, the District of Columbia, any better than whoever doesn't move them today?

Mr. **Baker**. Well, the fact that I guess I was coming from is that there is no——

Representative **Dyson**. Is it just going to be a collector of research?

Mr. **Baker**. No. I think it would be an entity that would help move Maryland, Virginia, Delaware, West Virginia, Pennsylvania, et cetera, because you would co-opt the States into the process at the outset. They would be involved in the direction and in the management of that office. When someone is involved——

Representative **Dyson**. Can I interrupt you?

Mr. **Baker**. Certainly.

Representative DYSON. It is a Bay Liaison Office and you used the word apolitical, which I think is a bad idea. You know, for all the bad press they get, at least the EPA can come out and can threaten Maryland, can threaten Pennsylvania, can threaten the District of Columbia, Virginia, the rest, and they can cut off funds. That is a heck of a threat these days with declining revenues. That is maybe not a positive way, but at least as a motivating factor to getting something going, to making some of these hard decisions. Like I said, they have been around for 10, 12 years—or my career in politics, 10 years—and certainly longer than that.

Mr. BAKER. You hit upon a very good point. If EPA was doing those things you said, we might not need an Office of Chesapeake Bay Liaison. The fact is they are not.

Representative DYSON. Well, I guess we are going to have them up shortly.

Senator Stafford was interested in marine sanitation devices. I guess he does some power boating, so he certainly would be. They would be considered what, point sources of pollution, right?

Mr. BAKER. Yes, sir, I suppose they would be.

Representative DYSON. What effect do they have as far as—is that much of a problem? How effective are these devices in cleaning up? It was a consideration I remember years and years ago with marinas.

Mr. BAKER. I have been trying to dodge that question for 4 years and you finally put me on the spot. [Laughter.]

Representative DYSON. You can thank him. He ducked out to take that vote.

Mr. BAKER. I really don't know the contribution of recreational boats to pollution in the Chesapeake Bay. EPA does not know the contribution of recreational boats. That is one of the problems. We don't believe there is a basis for that law. We feel that the——

Representative DYSON. You don't feel that there is a basis for the law?

Mr. BAKER. Well, we don't feel there is a basis for putting money into control of small amounts of sewage from individual sources around the bay on the water when you have virtually every sewage treatment plant in the State of Maryland in noncompliance; when you have two-thirds of the sewage treatment plants in the State of Maryland repeat offenders; when you have a state of the art sewage treatment plant in Annapolis on Back Creek routinely, once or twice a year, spilling over 100,000 gallons of raw sewage into the creek, into the head waters of the creek; and when you allow things like that to continue, and then put in a costly and very difficult to enforce program controlling sources of pollution from boats, we feel that the emphasis is misguided.

Representative DYSON. Perhaps I shouldn't comment, but a lot of the boat owners and boat United States and the recreational people would probably endorse your remarks.

One other question, another loaded question perhaps. This whole bay model, I am in a very difficult position right now, as that is in my district, and I am part of the Armed Services Committee, all of that. I had some reservation to begin with. Of course, as a member of Congress, my reaction is immediately, when you hear something is closing in your district, such as a post office—and not every district has a bay model—but it is to say no, to react that way.

We have a $27 million study, with an additional $900,000 thrown in, perhaps other moneys coming into this from various other States. Is the bay model useful? Could the bay model be useful? I guess I shouldn't ask has it been in the past.

Mr. **Baker**. Of course, that question would be more appropriately directed at the research institutions that have or have not used it. We are not a research institution so, therefore, I feel somewhat inappropriate commenting on it.

My understanding from the scientists I have talked to who have been involved in using it to a large extent is the hydrologic model of the Chesapeake Bay is a gross averaging of data. What you can do with a computer model in many instances may be more effective.

However, we do understand that there are certain types of studies—for instance, flow characteristics, salinity regimes, and that sort of thing—which the bay model can be useful in answering.

The question is are the answers and are the studies being performed on the model significant enough to justify its cost? I am simply not equipped to answer that.

Representative **Dyson**. So you can't say whether Congressman Dyson ought to fight to keep it open or to close it.

Mr. **Baker**. No, sir.

Representative **Dyson**. Your organization has never used that.

Mr. **Baker**. The one use we have made of it, which I should have mentioned, is as an educational tool. We run programs in the summer for gifted and talented students where we have the same students for actually 2 weeks in our field education program. We have taken the students over there for part of the day in that program, and it has been a very useful educational tool in that respect. Nowhere else can you see the Chesapeake Bay in one room and walk from Kent Narrows down to the Choptank in a few steps.

Representative **Dyson**. I guess as acting chairman it gives me a tremendous amount of liberties. [Laughter.] The Chesapeake Bay Foundation is very much concerned about all of the tributaries that enter into or impact on the Chesapeake Bay. In that light, I assume that is why you have gone into St. Mary's County, Md. and taken the Corps of Engineers and the Fish and Wildlife Service, somebody, if not the county commissioners, to court over the impoundment of one of the tributaries of the St. Mary's River. That has been ongoing, as you know, for 17 years. That is, by the way, within sight of my home. Great Mills is not very big. When you open up the Washington Post and see Great Mills in the Washington Post, you first of all wonder how they ever found it. What is the thrust of this?

Mr. **Baker**. Just one correction. We have taken the Army Corps of Engineers and the Soil Conservation Corps to court. The Fish and Wildlife Service has opposed the project from the outset.

Representative **Dyson**. Excuse me. It was my understanding that the Fish and Wildlife—the corps would not sign off on that until Fish and Wildlife had endorsed it, originally.

Mr. **Baker**. Originally. The final plan did have a limited endorsement by the Fish and Wildlife Service, you are correct. The Environmental Protection Agency continued its opposition to the project to the very end.

The Chesapeake Bay Foundation has been criticized, and the Washington Post article alluded to this, to the effect that we came in at the last minute to halt a project which had been years in the planning. If it is all right, I would like to comment on that aspect of it, and I think that is in essence part of your question.

The project was, yes, started in 1968, 1969, and in 1970 the environmental impact statement was prepared. It was one page, and the adverse environmental impacts were articulated in one sentence; that is, no adverse environmental impacts are anticipated.

From the period of time in 1970 until about 1980, the State of Maryland put that project on the back burner. They did not feel it was a priority project. However, with the Reagan administration and the cutback in Federal funds to States, the State of Maryland realized that the Soil Conservation Service money, which was to be made available for the project, would not be available hence, and they moved very quickly to try and get that final approval from the Army Corps of Engineers passed.

It was at the time when the State of Maryland applied for an Army Corps of Engineers permit to create a dam, to flood 170 acres of wetlands, to create a swimming lake, to build a park and all, that the Chesapeake Bay Foundation disapproved and became involved in the process. We immediately went to see Secretary Colter and explained our opposition to the project.

So that quite to the contrary, us not getting involved until the very end, I feel that we got involved at the appropriate opportunity for an organization such as ours to comment.

Our opposition to the project is that it creates a lake for swimming in an area in which there is already a lake for fishing which is not very heavily used. The cost-benefit analysis for the project was, we think, inappropriate. It estimated that 329,000 people a year would come to the park. There has been no plan to increase the size of the little two-lane road that leads into it or to do any other planning for 329,000 people to come to the park.

In addition, it is very surprising to us why there is so much emphasis placed on the need for a lake to create a park in an area that has a beautiful free-flowing river.

Representative Dyson. Of course, the concern is not so much that as it is the impact on the wetlands, correct, feeding into the St. Mary's?

Mr. Baker. Our concern is the destruction of wetlands, the loss of a free-flowing river, and the fact that the corps violated the law and its internal regulations in issuing the permit.

Representative Dyson. Well, I am fresh out of questions. I don't know what you want to do. We are also in the middle of a committee meeting over on the other side that I need to get back to.

We are going to recess the committee until the Senators return. When they return, it will all be the Senators. I have to leave.

I would like to thank you, though, on behalf of the committee, for being here and for your testimony. I regret I am not going to be able to listen to the distinguished gentleman from the EPA. I see him frantically writing all of his questions or answers down since he got here.

Thank you again. The committee will stand in recess.

[Brief recess.]

Senator **Mathias** [presiding]. The committee will come to order. Because of the unexpected interruption that we have had, I am going to submit some further questions to Mr. Baker in writing and I will ask him to address them in writing.

[Mr. Baker's prepared statement, with attachments, and responses to written questions submitted by Senator Mathias follow:]

The
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Preliminary Assessment of the
U.S. Environmental Protection Agency's
Chesapeake Bay Program

INTRODUCTION

The Chesapeake Bay Foundation is a non-profit conservation organization with a staff of twenty-seven environmental professionals and with a membership of over 11,000 concerned citizens. Since its inception in 1966, CBF has been dedicated to ensuring the wise management of the natural resources of the Chesapeake Bay Region. Accordingly, we have followed the Chesapeake Bay Program of the U.S. Environmental Protection Agency (EPA) closely in the hope that this massive research effort will provide the information and data necessary to develop and implement effective programs to restore and maintain the environmental quality of the Bay. We welcome the opportunity to provide this assessment of the Chesapeake Bay Program.

I. The Congressional Mandate

In 1975, Congress appropriated money for EPA to conduct a major research program on the Chesapeake Bay. In providing this funding, the Senate Committee on Appropriations reported:

> . . .the Chesapeake Bay is a critically important natural and economic resource but is subject to many pressures which, if uncontrolled, will lead to the degradation of the whole Bay area. The Committee, therefore, directs the Environmental Protection Agency to conduct an in-depth study of the Chesapeake Bay, which shall also be applicable to other estuarine zones.
> (Senate Report 94-326)

The Committee set forth the specific components to be included in this study, directing EPA:

> . . .to assess the principal factors having an adverse impact on the environmental quality of the Chesapeake Bay, as perceived by both scientist and users, and to direct and coordinate, subsequent to a review of presently ongoing research, research and abatement programs that will most efficiently address those factors.
>
> The Committee further directs the Agency to analyze all environmental sampling data presently being collected on the Chesapeake Bay and to suggest and undertake methods for improving such data collection. The Agency is also directed to establish a continuing capability for collecting, storing, analyzing and disseminating such data. A sampling program should be instituted where deficiencies are found to exist in present sampling programs.
>
> Finally, the Agency should determine what units of government have management responsibility for the environmental quality of the Chesapeake Bay and define how such management responsibility can best be structured so that communication and coordination can be improved not only as between the respective units and research and educational institutions, and concerned groups and individuals on the Chesapeake Bay. This final facet of the study should review not only ways to improve existing Chesapeake Bay management mechanisms, but also new alternatives which seem promising. Id.

Congress thus instructed the Agency to proceed down two parallel, and complementary paths. At that time, our understanding of the physical, chemical and biological processes that give the Bay its character and value was far from complete. Managing such a complex and dynamic ecosystem without adequate understanding of these controlling processes had proven difficult. Congress therefore wanted to gain a more thorough knowledge of how the system works.

The existing management responsibilities involve six states, several federal agencies, a number of commissions, and many local governments. This approach had proven ineffectual in accommodating the multiple uses of the Bay and in maintaining an acceptable level of environmental quality. Understanding how these institutions interrelate, many with conflicting views on the Bay's resource management, is a prerequisite for managing the Bay. Again, Congress saw the necessity for learning more about the interrelationships and the management roles of the various agencies to determine whether management of the Bay's natural resources could be significantly improved.

II. CBF's Evaluation of the EPA Bay Program

On September 30, 1982 Senators Mathias and Stafford, Chairmen of Subcommittee on Governmental Efficiency and the District of Columbia, and the Committee on Environment and Public Works, respectively, requested that the Cheapeake Bay Foundation (CBF) "evaluate the way the program has been carried out by EPA." In a letter to William C. Baker, CBF Executive Director, the Senators wrote:

> . . .the evaluation should also consider the structure(s) for continued Bay water quality monitoring, when that document is published.
>
> The language of the 1976 appropriations committee report and subsequent appropriation committee reports were clear in their mandate to the agency. Has the agency carried out that mandate? Are there any areas of serious lapse where the agency has not fulfilled the Congressional mandate of the Program? What future role should EPA play in water quality protection of the Chesapeake Bay?

In the light of CBF's extensive involvement in water quality issues and our hope that the EPA Bay Program results in meaningful, useful management recommendations we welcome the opportunity to provide the evaluation requested by Senators Mathias and Stafford. This report provides CBF's preliminary assessment of the EPA Bay Program. The assessment reflects an evaluation, conducted by CBF staff scientists, of the technical studies performed or sponsored by EPA and also extensive interviews of many of the involved scientists and managers.

In our preparation of this evaluation, we broke the broad Congressional mandate, quoted above at 2, into specific directives concerning the scope of the project, the technical research, and management considerations. These directives are:

1) Conduct an in-depth study of the Chesapeake Bay which would be applicable to other estuaries.
2) Review on-going research.
3) Direct and coordinate a research program to assess the principal factors having an adverse impact on the environmental quality of the Chesapeake Bay.
4) Analyze the data presently being collected on the Bay.
5) Determine what units of government have management responsibilities for the Bay.
6) Suggest and undertake methods for improving data collection.
7) Establish a continuing capability for collecting, storing, analyzing and disseminating such data.
8) Institute a sampling program to correct difficiencies in existing sampling programs.
9) Define how management responsibility can best be structured to improve communication and coordination between resource managers and users.
10) Review ways to improve existing management mechanisms.
11) Identify and review promising alternative management mechanisms.
12) Direct and coordinate abatement programs that will most efficiently address the factors affecting the Chesapeake Bay.

In the report that follows we will provide an evaluation of those specific directives that EPA has completed.

We must emphasize the preliminary nature of this report. In September of 1982, EPA published "Chesapeake Bay Program Technical Studies: A Synthesis" that summarized and integrated the principal findings of the forty scientific studies undertaken in the program. EPA has not finished the two reports that complement and complete the Bay Program, "Characterization of Chesapeake Bay" and "Management Strategies for the Chesapeake Bay." Initial drafts of these reports have been circulated for review and comment. At the present time, however, it would be premature to provide a detailed evaluation of these reports that are undergoing thorough revision. CBF stands ready to provide an evaluation of these reports upon their completion and publication.

DISCUSSION

I. The Technical Studies of the EPA Bay Program

CBF believes that the technical information produced as part of EPA's Chesapeake Bay Program has increased our knowledge of the Chesapeake estuary to the point that we now have the ability to properly manage the resource by instituting a comprehensive management plan for the Bay. A few examples will serve to make this point clear:

--- In 1976, it was widely believed by both the public and the scientific community, that the Chesapeake Bay was a self-cleansing ecosystem. Many believed that the majority of contaminants entering the Bay readily flushed out into the open Atlantic Ocean. As a result of CBP research, we now have a considerable body of evidence suggesting that this is not the case.[1/*] For the nutrients nitrogen and phosphorus it now appears, that on an annual basis, only a small fraction (less than 1%) of these elements that enter the Bay actually leave by

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[*] The footnotes in numerals are citations to references listed in the Bibliography; textual footnotes are cited seperately in the text.

any means. Thus, the vast majority of the nitrogen and phosphorous introduced into the Bay's waters stays in the system and promotes the observed excessive phytoplankton populations now commonplace in the Chesapeake.[2/]

-- At the beginning of the CBP, it was widely assumed that the decline of the Bay's grasses was directly related to the emergence of no-till agriculture in the region. This form of agriculture relies heavily upon the application of wide spectrum herbicides to control weed infestations. By 1981 it was clear to a number of CBP researchers that this initial hypothesis was in error. Evidence now suggests that the Bay's grasses are existing in a marginal light environment.[3/] This loss of light energy was in many cases directly correlated with the recent increases in phytoplankton densities.[4/] The greater phytoplankton densities were themselves tied to the increased availability of nitrogen by CBP researchers.[5/]

-- During the 1976 Bi-State Conference on the Chesapeake Bay, non-point source (NPS) pollution was considered a potential problem.[6/] The majority of attendees understood that it was a problem. However, no evidence existed to detail its relative contribution to the changes occuring in the estuary. Today we know that NPS is a major contributor to the over-enrichment of the Bay and its tributaries.[7/] A strong correlation exists between excessive nutrient inputs and stresses related to over-enrichment of the Bay's waters (i.e., oxygen depletion in the main stem.) The economic loss to the agricultural community in the watershed is also clear. Poor land-use practices and excessive fertilizer losses are costing the region's farmers a staggering sum in lost income and future productivity.

Clearly from the above examples, the Chesapeake Bay Program has produced valuable information. A much clearer understanding of the Chesapeake Bay as a living system now exists. The Bay is inextricably tied to 64,000 square miles of land which feeds its waters. Developing attainable, prudent goals and designing the management strategies necessary to reach those goals is now possible.

The Congressional mandate, quoted supra on page two, set forth a number of specific directives with respect to the technical undertakings of the EPA Bay Program. The following subsections of this report will address EPA's performance with respect to these directives.

A. Mandate: Conduct an in-depth study of the Chesapeake Bay, applicable to other estuaries.

EPA, through the Chesapeake Bay Program, has conducted an in-depth study of the Chesapeake Bay. As directed by Congress the study is applicable to other estuarine zones. This study had two primary components. First, the Program has amassed a very large data base on the physical, chemical, and biological characteristics of the Bay. These files comprise the first comprehensive historical data base for the Chesapeake. Second, the Program funded more than 40 technical studies dealing with a variety of topics germane to the estuary. In turn, these studies resulted in the compilation of 59 technical reports, adding greatly to our understanding of estuarine processes (see Appendix A).

The Chesapeake Bay Foundation believes that the results of this study are applicable to the Nation's other estuaries. Although the relative magnitude of the various processes will vary between individual estuaries, the same basic processes will nevertheless be present and important. Three CBP scientific findings have important implications:

1. The accumulation by natural processes of nutrients and toxicants in

the Chesapeake Bay.

2. The identification of nitrogen as the potential limiting nutrient.

3. The coupling of land-use practices to non-point source (NPS) pollution and the quantification of NPS pollution as a significant factor in the over-enrichment of an estuary.

First, the potential for the accumulation of both nutrients and toxicants is now well-documented. A specific example will serve to illustrate this process. A "budget" of the annual inputs and outputs of nutrients in the Bay shows that only .5% of the nitrogen that enters the system flushes out into the Atlantic.[8/] A very large portion of the nitrogen is deposited into the Bay's sediments. A substantial portion of this fraction is rapidly remineralized and re-enters the system's biological processes where it provides nitrogen required to sustain the excess algal populations in the Bay.[2/] In addition, the nitrogen that enters "deep storage" in the sediment will continue to be available through processes such as diffusion, storm events, and irrigation by benthic organisms. Although the chemical and physical processes are very different for both phosphorus and the many toxicants identified by the Program, the net result is much the same. The importance of these processes cannot be over-emphasized. We must excersise extreme caution if we choose to use our Nation's estuaries as waste receptacles.

Second, CBP sponsored research also investigated the relationship of the various chemical forms of nitrogen and phosphorus to the over-abundance of algae plaguing many areas of the Bay. Nitrogen is now recognized as a potential controlling factor for summertime phytoplankton populations in much of the Chesapeake.[5/] It would not be unreasonable to suspect that the same set of circumstances exists in other estuaries. Most, if not all, will be controlled by the same general physical and chemical processes. This finding implies that some form of both nitrogen and phosphorus control will be necessary if we are to protect estuarine resources. Presently, even EPA does not recognize the necessity for controlling nitrogen inputs into the Nation's freshwater streams and estuaries. As recently as January of this year the Agency released a final Environmental Impact Statement (EIS) entitled "The Patuxent Wastewater Treatment Facilities: Anne Arundel County, Maryland" in which it is stated, "The information and studies performed to date do not provide an adequate technical basis to support nitrogen control in addition to phosphorus control."[11/] By ignoring the downstream impacts of nitrogen loadings, EPA's Region III is apparently giving short shrift to a major conclusion of the CBP (see footnote 1).

Finally, the coupling of land-use practices to the degradation of estuaries is now documented. On a mean annual basis, 50-55% of the total nitrogen loadings to the estuary are from non-point sources.[10/] The equivalent figure for phosphorus is 30-34% annually.[10/] A ranking of the land uses on the basis of total loadings per unit of area is: cropland, residential areas, pasture and forest. Clearly, we will not be able to manage our estuarine-based resources until we can effectively manage our land resources.

B. Mandate: Assess the Principal Factors Adversely Affecting the Bay.

The task of assessing the principal environmental factors affecting the Chesapeake Bay, as set forth in the mandate to the Agency, has been a difficult one. Initially, ten potential factors (Appendix B) were identified as worthy of investigation by the Program based on responses from the Bay users and the region's scientific community. Given the limited fiscal resources made available to the program, this list was narrowed to three factors as a result of a consensus reached by the Program and area scientists. We believe that the approach taken by the Program, targeting these three specific factors (nutrients, toxics, and submerged aquatic vegetation) of the many possible, was justified on the basis of available technical and fiscal resources. This approach, while not supplying all the answers to all the questions, did add considerably to our understanding of the estuary.

This is not to imply that other factors do not play an important role in modifying the estuary. Nor should we take the findings of the program as the final word in the areas investigated. This is especially true with toxic contaminants. CBP research has shown that a number of areas have dangerously elevated levels of toxicants present.[12] However, present scientific understanding does not permit us to draw correlations between the levels of toxicants present and the effects upon the biological resources of the Bay. For instance, too little is known on subjects such as the long term effects of chronic exposure to particular compounds in estuaries or the synergistic effects that a combination of substances may exhibit. For this reason expanded monitoring and continued research is necessary.

C. Mandate: Review of Existing Research and Analysis of Existing Data.

EPA's review of existing research programs appears to have been adequate. The relative success of this effort was due in large measure to the Program's extensive use of the region's major research institutions as cooperative partners in the technical studies. To our knowledge, no significant research programs were overlooked (see footnote ii). In addition to the Program's review of the then on-going research, historical data were compiled, edited, and stored by the Program. Literature, published and unpublished, and monitoring data from state and local governments as well as private industry are presently in the Program's computer files. In some areas, this information is difficult to interpret (e.g. historical fisheries data), in others it is presently incomplete (i.e. data from USGS Potomac Estuary Study, etc.). This does not, however, detract from the value of the data base as a whole. As it is upgraded and refined, it will be an extremely valuable tool in any attempt to monitor long term trends in the estuary and its biological resources.

D. Mandate: Identify the units of government responsible for managing the Chesapeake Bay.

As set forth in the mandate, the Agency has identified the units of government that have management responsibilities for the Chesapeake Bay. This information, contained in a report entitled "Environmental Quality Management Study: Agency and Legal Authorities Survey" appears to be comprehensive. Prepared for the Program by the Environmental Law Institute (ELI), the document examines the federal, state, interstate, and regional management agencies, representative bodies of local government, research institutions, and legislative bodies with interests on the Bay. Although the document is dated, completed in December of 1980, it will serve as a resource for Bay managers and interested citizens, if made available.

In conclusion, we believe that there are certain general lessons to be learned from the Program which will greatly improve any future effort of this type.

First and foremost, the initial attempt by EPA to run the Program out of the Philadelphia Region III office was an extremely costly mistake in terms of both dollars spent and time lost. We are still paying for the time which was lost - the Program, at least two years overdue, is still incomplete - and we will never, of course, recoup the lost dollars.

Although the early years were not a total loss, the Program was not fully operational until a full-time administrative staff was hired whose responsibilities rested solely with the Program and until that staff was centralized in the Annapolis office. In light of this, it seems incredible that on October 1, 1982 (the start of FY '83), EPA Region III recommended moving administrative authority for the Program back to Philadelphia. That was done, confusion and ineffective management resulted for several weeks, and eventually much of the administrative responsibility was returned to the Annapolis office when Ms. Virginia Tippie was named Director. In future programs of this type, we believe that the administrative responsibility should rest with a full-time, on-site staff. The vesting of such administrative authority in EPA officials who are not working full-time on the project is counterproductive.

CBF endorses the concept of a management committee; we feel that it is the proper mechanism for oversight from EPA, the participating states and the "citizen" representatives. In regard to the Chesapeake Bay Program, we believe that the contribution of the management committee has been significant, but that it was instituted too late. To have been truly effective, it should have been in place at the outset.

II. Management Aspects of the Chesapeake Bay Program

The Congressional mandate contains specific directives concerning continuation of research efforts, sampling, and data collection. Another set concerns management and institutional recommendations designed to improve water quality and pollution abatement programs. These directives bear directly on the future management of the Bay. Questions yet to be answered include:

-- Has the Agency established a continuing capability for collecting, storing, analyzing and disseminating data related to the Bay and its management?

-- Has the Agency adequately reviewed ways to improve existing management mechanisms?

-- Will the Agency direct and coordinate an abatement program that will address the factors affecting the Chesapeake Bay?

Although CBF has reviewed preliminary drafts of the Management Report and submitted detailed comments on certain aspects of the draft, we believe that at this time it would be premature to comment on this subject. We have, however, been encouraged in the past several months and believe that the Agency is moving towards the completion of an adequate work product. Our optimism is based on: 1) the fact that sufficient funds have been allocated by Congress to complete the task, 2) in interviews with Program staff we have been assured that our comments and suggestions pertaining to the first draft of the Management Report will be addressed in future drafts, and 3) the states, working together in the Management Committee, are committed to the production of a thorough and useable Management Report. We must note however, that, to date, a second draft of the Report has still not been completed.

III. Public Participation in the EPA Bay Program

Congress directed the EPA to determine how management responsibility "can be best structured so that communication and coordination can be improved not only between the respective units of government but also between those units and research and educational institutions, and concerned groups and individuals on the Chesapeake Bay." An important component of the effort to improve communication was the development of public involvement and participation in the Bay Program.

In 1977, two years after the start of the Bay Program, EPA initiated a public participation effort. In October of that year, the agency signed a contract with the Citizen's Program for the Chesapeake Bay (CPCB), a private, non-profit organization, created in 1971 and incorporated in 1973 for the purpose of providing a neutral forum for constructive dialog between groups and individuals who use the Bay. CPCB's membership includes representatives of organizations, firms, educational institutions and agencies with an interest in the Bay.

EPA provided CPCB with a broad set of guidelines for implementing the public participation effort which CPCB used as its basis for program development through December of 1982. These guidelines directed CPCB to: 1) disseminate educational materials to Bay users and the general public concerning the Chesapeake Bay Program; 2) provide an opportunity for Bay users and others affected by water quality planning and management programs to state their interests; 3) provide opportunities for Bay users and others to assist in the process of translating needs into management programs; and 4) develop an opportunity for a representative body of Bay users to effectively participate in the EPA Chesapeake Bay Program decision-making process.

CPCB programs and projects fall into two general categories: 1) those projects which were aimed at educating the general public in the Bay area about the findings of the Bay Program; and 2) those efforts which were targeted at increasing the involvement of the Bay "users" - those individuals, groups, and organizations with a vested interest in the management of the Bay. Although these two efforts were of course interrelated, they did have distinct goals, objectives, and programs, and deserve separate discussion.

A. Education of the General Public

Until 1980, a large proportion of the Program's resources was directed towards general public education. During this time CPCB concentrated on producing a large number of printed materials and visual displays which were disseminated to a wide audience around the Bay. Included in these materials were fact sheets, newsletters, posters, information flyers, brochures, press releases, and table top displays. CPCB representatives attended numerous public functions and made presentations using slide shows developed by their staff. Several TV productions and radio Public Service announcements were aired, and a feature length movie was also produced and distributed, further expanding the exposure of the program. In addition, the CPCB developed a mini-grant program which distributed funds to other non-profit organizations, educational institutions, and associations to stimulate local efforts.

From 1981 to December 30, 1982, major shifts in allocations of resources occurred to place greater emphasis on ensuring the involvement of user groups in the program. During this time, and particularly in the last year, the effort to continue to educate the general public was gradually scaled down and finally reduced to a small fraction of the overall program activities. This shift can be attributed to two factors: 1) a belief on the part of CPCB that more direct effort had to be targeted at the resource users groups to successfully involve them, and 2) particularly in the last year, funding was reduced to the point where only bare budget programs could be carried out. As a result, when the Synthesis Report was finally released in September, the CPCB could only provide limited distribution of those results.

Two other aspects of the public education effort should be noted. First, in January of 1982, EPA published a thirty-page booklet entitled "Chesapeake Bay: Introduction to an Ecosystem." This publication is an excellent primer to the ecological processes of the Chesapeake Bay, explaining the geology of the Bay, the physical characteristics and chemical properties of the Bay's waters, the key biological communities of the Bay, and its food production and consumption. The writing is clear and understandable, and the booklet should serve as a basic introductory text for high school students and interested members of the general public. CBF's extensive use of this booklet in our educational programs indicates our high regard for this work.

A second aspect of the public education effort has been the willingness of both EPA and CPCB to meet with interested members of the public. Through the summer and fall of 1982, key staff personnel spent an enormous amount of time appearing at meetings to set forth and explain the major findings contained in the Technical Synthesis. Although a time-consuming and perhaps tiresome chore, individuals such as Tom DeMoss, former Deputy Director of CBP and Fran Flanigan, Director of CPCB, undertook this responsibility both seriously and cheerfully.

It is difficult to assess a public education effort, the success of which depends not simply on the quality and quantity of tangible products, such as presentations and publications, but also on the effect on, and response of, the targeted audiences. In our opinion, however, the public education effort was largely successful and public awareness and concern for the Bay and its health have been enhanced. The one shortcoming of this effort, however, is that a large proportion of the funding was provided at the beginning of the Program and reduced at the end, resulting in the decreased ability of the Program to disseminate the results of the research at what is arguably the most important time - the period following the release of the Synthesis Report when management recommendations and public policy are being formulated.

B. Involvement of Interested Persons in the Conduct of the Program

CPCB began the effort to involve the Bay's user groups in the Program early, when it formed the Citizen's Steering Committee (CSC) in 1977. Composed of 18 representatives of industry, watermen's organizations, environmental groups and public agencies, the CSC acted as the representative body for Bay users through 1982. In addition, this group formulated policy for much of the future development of the public participation effort.

During this period the CSC solicited and received information on "user needs" around the Bay and conducted numerous meetings, workshops, forums and field trips designed to educate Bay users about the major issues facing the Bay and affecting themselves as well as soliciting their input about the progress of the EPA Bay Program research and its results.

In 1981, the effort to involve Bay user groups was refined and expanded principally through the formation of the Resource Users Management Team. This body, composed of representatives from agriculture, state and federal agencies, watermen's groups, and private industry and environmental groups, actively participated in the review of the EPA data and research. During this time, the Program successfully involved representatives of the agricultural community and the State of Pennsylvania through expanded field trips, forums, and workshops.

The guidelines that EPA established for this aspect of the public participation effort sought to provide opportunities for Bay users to state their interests, to translate their needs into management programs and to effectively participate in the decision-making process. In the latter stages of the EPA program, this effort, in CBF's opinion has been generally successful. In the first two years of the EPA Program when much of the future direction and scope of the research was determined, there was little effort to encourage such participation. Earlier development of the public participation effort could have resulted in a stronger bond between the agency and the public throughout the entire process with a more efficient allocation of funds and resources.

A final point is that this aspect of the public participation effort is not yet complete. As EPA completes its Management Report, it is necessary that it incorporate the views of these participants. Translating the reports into action will require the commitment of many diverse parties, and their involvement must be continued to ensure success.

RECOMMENDATIONS OF THE CHESAPEAKE BAY FOUNDATION

The ultimate success of the EPA Chesapeake Bay Program will depend on whether implementation of the control strategies and other management recommendations reverses the trend towards environmental degradation of the Bay. Translating EPA's recommendations into action will require the commitment of all parties -- federal, state and local government, Bay users, and the general public.

CBF believes that certain steps can now be undertaken in response to EPA's technical findings and in anticipation of the completion of the Management Report. These steps should not foreclose the adoption and implementation of the recommendations of the Management Report. In addition, we recommend the establishment of an Office of Bay Liaison and enactment of federal legislation to provide federal funds for future research and implementation of the recommendations of the Management Report.

A. Office of Bay Liaison

The Office of Chesapeake Bay Liaison should be an entity, established before the end of Fiscal Year '83, that will continue the cooperative efforts of managing the Chesapeake Bay which have been established by the States of Virginia, Maryland, and Pennsylvania and the federal government over the past six years. In addition, it will allow for a smooth transition of information, computer capability, data collection, monitoring resources, etc. to the states.

Such an office should be staffed at a minimum by an executive director; a computer expert with support staff; a monitoring expert with staff; a public information director; an administrative assistant; and necessary support and clerical staff. An annual budget of $500,000 may be sufficient to operate this office. We propose that funding be contributed in the following proportion: 50% - federal; 20% - Maryland; 20% - Virginia; 10% - Pennsylvania.

Although the Office should be largely autonomous to ensure its apolitical nature, the states and the federal government will be paying for it and will be the direct recipients of its services. We therefore propose that a Board of Directors with oversight and advisory responsibilities be created. The composition of this Board should include representatives from EPA and the states, a citizen representative, and a member of the academic or research community.

This Office would not, we emphasize, be the permanent management response to the EPA Bay studies. Its purpose and objective is to ensure the continuity of the ongoing work and to enable the smooth transition to the implementation phase of the EPA Chesapeake Bay Program.

B. Enactment of Federal Legislation Addressing the Chesapeake Bay

Senator Chafee has introduced Senate Bill 431, entitled the Clean Water Act Amendments of 1983. This bill provides strong federal support for implementing an interstate management plan for the Bay and for continuing the research activities of the Chesapeake Bay Program.

S.431 contains federal financial support to continue the research initiated by the EPA Bay Program. For this report, we have identified areas in which additional or continued research would increase our scientific understanding of the estuary, for example the long-term effects of toxicants. Carrying forward the scientific research is a necessary complement to implementation of the recommendations of the Management Report.

In addition, we believe that such strong federal support is absolutely essential if we are to undertake seriously the task of restoring the health of the Chesapeake Bay. Controlling nutrient inputs from rural and urban runoff, upgrading sewage treatment plants, and eliminating toxic contamination will be an enormous and expensive job. We believe that the states share a strong sense of commitment, but their technical and financial resources are limited. The Chesapeake Bay is a national resource, a national treasure, and we believe that S.431 reflects an appropriate, indeed necessary, commitment of the federal government.

SUMMARY AND CONCLUSIONS

On the basis of information presently available and our review thereof the Chesapeake Bay Foundation is able to make the following statements regarding the EPA Chesapeake Bay Program:

- The technical information produced by the Program has been of high quality and has eliminated much of the ignorance and uncertainty that previously hampered efforts to properly manage the Chesapeake Bay.
- This information provides the basis for decision-makers to develop attainable goals and to design effective control strategies.
- The findings, particularly with respect to nutrient enrichment and toxic pollution, have national implications for other estuaries.
- It appears that EPA is striving to complete, in a timely fashion, a management report that explores the control strategies and options available to address the problem of nutrient over-enrichment.
- In the latter stages of the Program, the public education and participation effort was generally successful, both in disseminating information to the general public and in involving interested members of the public in the development and review of the Program findings.

The final section of this report has set forth recommendations that CBF believes important to ensure the continuation of cooperative efforts of the federal and state governments and to enable smooth transition to the implementation stages of the EPA Bay Program. First, we recommend that an

Office of Chesapeake Bay Liaison be created as an interim mechanism to allow cooperative work to continue. Second, we recommend that federal legislation be enacted that provides strong federal support for the implementation of EPA's management recommendations.

Footnote i

The Patuxent River, a sub-estuary of the Chesapeake Bay, has been the focal point of a controversy between various local governments, state agencies and the Environmental Protection Agency for several years. Continually declining water quality forced the downstream jurisdictions to seek judicial relief.

In March of 1978 a suit was filed in U.S. District Court challenging the adequacy of the EPA-approved Patuxent River Basin Water Quality Management Plan. This plan advocated phosphorous control as the preferred wastewater treatment method for controlling over-enrichment in the Patuxent.

On October 30, 1980 the court ruled in favor of the lower jurisdictions and ordered EPA to prepare a new water quality plan as required by Section 208 of the Federal Clean Water Act.

As an initial step in preparing the 208 Plan, the State through a contract with a private firm (HydroQual, Inc.)developed a mathematical water quality model for the Patuxent. During the review process, it was noted by several researchers that the model did not appear to accurately represent the River. In order to resolve this controversy, and to set goals for the Patuxent, the State held, in December of 1981, a conflict resolution session (charrette). This session brought together scientists,managers,and elected representatives with the expressed purpose of developing a nutrient control strategy for the river.

During the course of the charrette the consensus emerged that the model developed by Hydroqual, Inc did not adequately represent events in the lower third of the estuary. As a result, the charrette recommended that both nitrogen and phosphorus be removed as part of the nutrient control strategy. Specifically, the compromise produced by the charrette called for the removal of 4,000 pounds per day of nitrogen - 2,000 pounds from point sources and 2,000 pounds for non-point sources. EPA has not supported this strategy.

Footnote ii

A major concern voiced by several individuals in this regard is the Program's apparent lack of coupling with the USGS Potomac Estuary Study. Although it appears that cooperation did in fact occur, the actual levels of cooperation and how much they could have been improved appears open to some question. We are presently taking a closer look at the linkages developed between these two federal programs and will present any significant findings in our follow-up report to the Committee.

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APPENDIX A:
Technical Reports prepared for the CBP as of 7 September 1982

- Distribution of Submersed Vascular Plants
  Chesapeake Bay, Maryland - Richardson Anderson - 1978 - R805977
- Distribution and Abundance of Submerged Aquatic Vegetation in
  the Lower Chesapeake Bay, Virginia - 1978 - Orth - R805951
- Distribution of SAV in Chesapeake Bay - Macomber - 1977
- Distribution and Abundance of SAV in Lower Bay Spring 1980 (for 1979)
  Orth - X003201
- Distribution and Abundance on Lower Chesapeake Bay - 1980
- Interactive Studies of Light Epiphytes and Grazers, VIMS, Orth X003246
- Biostratigraphy 805962
- Stratigraphic Evidence of Human Disturbance in Chesapeake Bay Tributaries-80668
- Distribution and Abundance of Waterfowl and Submerged Aquatic
  Vegetation in the Chesapeake Bay - 75-D-X0391 - Monro
- Further Investigations and Data Synthesis Report
  SAV-HPEL-Kemp - X003248
- Envirn. Regulation of Zostera Marina and Ruppia, Wetzel - X003245
- The Biology and Propagation of Zostera Marina, Eelgrass, in
  Chesapeake Bay, Virginia - Orth - VIMS - 805953 (Folder says 805962)
- Propogation and Impact of Herbicides, VIMS (Hershner) 805953
- SAV in the Chesapeake Bay - Its Role in the Bay Ecosystem and
  Factors Leading to its Decline (Kemp) 805932
- Functional Ecology of SAV Part 1 (Wetzel) #4 - 805974
- The Nursery Role of Seagrass Meadows in the Upper and Lower Reaches
  of the Chesapeake Bay
- Animal - Sediment Relationships of the Upper and Central Chesapeake
  Bay - Reinharz - 805964
- The Characterization of the Chesapeake Bay: A systematic Analysis
  of Toxic Trace Elements - 79-D-X0-717
- Chesapeake Bay Earth Science Study: Interstitial Water Chemistry
  MGS Hill 805963
- Chemistry of Wet and Dry Fall to Lower Chesapeake Bay - Wade - X-00-3225
- Evaluation Bioassay Methodology for Application to Chesapeake Bay
  and Other Estuaries Cronin - 807148

- Chemical Assessment of Atmospheric Input to the Upper Chesapeake Bay, Hill X-003223
- Aqueous Effluent Concentrations for Bio-testing Sandhu (RTP)
- Implementation of Innovating Dredging Techniques in the Chesapeake Bay Region - Mitre-Aurand
- Sediment Pore Water Chemistry - Tyree 8059660
- Fate, Transport and Transformation of Toxic Substances: Significance of Suspended Sediment and Fluid Mud - Nichols - 806002
- Investigation of Organic Pollutants - Huggett - 806012
- Toxic Point Source Assessment of Industrial Discharges, MRC - Rawlings 68023161
- Baseline Sediment Byrne-Hobb - 806001
- Physical Characteristics and Sediment Budget for Bottom Sediments in the Maryland Portion of Chesapeake Bay, and the authors are R.T. Kerhin, J.P. Halka, E.L. Hennessee, et.al.
- Monitoring Particle Associated Toxics Substances CBI - Taylor - 805959
- The Biogenic Structure of Lower Chesapeake Bay Sediments - Diaz - 805982
- Historic Review of Water Quality- Heinle - 806189
- Historical Review of Water Quality and Climatic Data From Chesapeake Bay with Emphasis on Effects of Enrichment-Camp Dresser & McKee - 68015125
- Water Quality Loads of the Susquehanna River at Harrisburg, Pa. (Fall line monitoring) Fishel 78-DX-0420
- Water Quality of the Three Major Tributaries to the Chesapeake Bay, the Susquehanna, Potomac, and James Rivers - D. Lang - USGS 78-DX-0420
- Sediment Suspension and Resuspension from Saml1 Craft Induced Turbulence - ERL - Ambrose
- Chesapeake Bay and Water Quality Models - 808013
- Modelling Study Loadings in Chesapeake Bay Basin- Hartigan - 807816
- Water Quality Lab at Hampton Cheung - 806229
- Chesapeake Bay Nutrient Dynamics CBI - Taft- 807637
- (Intensive Watershed Studied) - Pequea - X003146

- Patuxent - 803606
- Ware - 806310 (in-house)
- Occoquan - 806310 (in-house)
- Chester - 806343
- Development of Assessment Tools to Evaluate Nutrient Transport and Fate in the Lower Susquehanna SRBC X003224
- Delineation of Irradiance Available for Photosynthesis All-Champ - X003213-01
- Small Craft Induced Water Turbulence - 78-D-X0426
- Effects of Recreational Boating on SAV - AACC - 78-D-X0426
- Environmental Management in the Chesapeake Bay - X003200-01
- Review of Regional Management Institutions, Env. Law Inst., X003200-01
- Governing Chesapeake Waters: A History of Water Quality Controls on Chesapeake Bay, 1607-1972 - John Capper & Garrett Power - X003226-01
- Chesapeake Bay Sediment - Trace Metals - G. Helz - R805954
- Computer Model of the Chesapeake Bay System: Tributary River Basins, Tidal Tributaries, and Main Bay - Martigan - 807816
- The Consequences of Nutrient Enrichment in Estuaries (Bruce Neilson) VIMS - 806189
- Evaluation of Institutional Arrangements for Water Resource Problems (Resources for the Future)
- Review of Regional Management Institutions, Env. Law Inst. - X003200-01
- Summary of Subbasin Data, Chesapeake Bay Drainage Area, Maryland

APPENDIX B

The ten subjects originally considered by the CBP as worthy of in-depth investigation.

1) Wetlands alteration
2) Shoreline erosion
3) Water quality effects of boating and shipping
4) Hydrological modifications
5) Fisheries modification
6) Shellfish bed closures
7) Accumulation of toxic substances
8) Dredging and dredged material disposal
9) Nutrient enrichment
10) Submerged aquatic vegetation

RESPONSES OF MR. BAKER TO WRITTEN QUESTIONS SUBMITTED BY SENATOR MATHIAS

Question 1. What is the most significant accomplishment of the program to date? What is its most serious failing?

Answer. The greatest success, to date, of the Bay Program is that the states of Maryland, Virginia and Pennsylvania and the federal government through EPA are working together to help protect and restore the Bay. However, the ultimate success or failure of the Program will be determined by history. The Program will be a success if the local, state and federal governments are able to implement the forthcoming management recommendations. If the process falls apart, and the studies are relegated to the shelf, then the Program will have failed.

Specifically, however, the greatest shortcoming of the Program, to date, was, in our opinion, the waste of time and money during the first few years as described in our testimony.

Question 2. Are you familiar with the current year appropriation of $900,000 for the bay program and the congressional directives on the use of these funds? Do you believe EPA is fulfilling the congressional intent with regard to the use of these current fiscal year funds?

Answer. We have not been able to acquire satisfactory information regarding the fiscal year 1983 EPA Bay Program budget. However, we do not believe that the guidelines laid out in the November 5, 1982 letter to (then) Ms. Gorsuch from Senators Mathias, Sarbanes, and Warner and Representatives Dyson and Holt have been strictly followed. In fact, it appears to us that the $900,000 is being spent to complete the task which Congress directed EPA to undertake in 1976. We do not believe that this follows the Congressional intent behind the fiscal year 1983 appropriation.

Question 3. Would you comment on the composition and activities of the management committee? Has it been successful? How might it be improved? Should it be expanded?

Answer. Although we fully support the concept of a Management Committee, we have some very real concerns. For example, we believe that the make-up of the Committee and its obligations, responsibilities, and authority should be clearly established. At this time, the Management Committee is making important policy decisions—the cancelling of the proposed "technical conference," for instance—without officially mandated authority. In addition, no formal rules of procedure have been adopted by the Committee. Decisions are simply made by informal consensus.

We believe that all aspects of the Committee's operation should be formalized. We also feel that in the future, such a Committee should have at least one representative from the research/academic community and one representative from a regional conservation organization. The state officials on the Committee must also have the authority to make decisions at Committee meetings which will be upheld by their superiors. In certain instances, this has not been the case.

Question 4. What role do you see for private industries, watermen and shippers, in the future protection of water quality of the bay? What future role do you see for the research, scientific, and university communities?

Answer. As noted, we feel that the research/academic and the environmental community should be represented on the Management Committee by at least one representative each.

Other special interest groups who are not directly involved with the health and well-being of the Bay on a daily basis but who do play an important role—i.e. farmers, watermen, industrial interests, etc.—should be represented on a body such as the Resource Users Management Team (RUMT). As noted in our testimony, we believe that the RUMT Group has done a superb job and should be continued through the implementation phase of the Program.

Question 5. Your statement noted that acid precipitation, altered flow, and residual chlorine are all areas requiring further investigation. Would you identify problem areas related to the Bay requiring future research? From where should financial support for such research come?

I noted that an appendix to your statement lists the original ten areas proposed for investigation by the Bay program. (1) Wetlands alteration, (2) Shoreline erosion, (3) Water quality effects of boating and shipping, (4) Hydrological modifications, (5) Fisheries modification, (6) Shellfish bed closures, (7) Accumulation of toxic substances, (8) Dredging and dredged material disposal, (9) Nutrient enrichment, and (10) Submerged aquatic vegetation.

With three of these areas having been investigated, do you believe the other seven continue to merit EPA research on a priority basis?

Answer. The effects of acidic precipitation and residual chlorine are examples of new issues that appear to deserve attention by the research community. In the list of original study areas, there are topics that warrant investigation, for example, hydrological modifications. CBF is not in a position to set the relative priorities of original topics. These topics, as well as many others, have direct management implications. It is appropriate that the research community, user groups, and resource managers develop a consensus on a research agenda.

We do believe however, that it will be necessary to build upon and continue the work done by CBP researchers. The Bay program provided few definitive answers. Instead it has narrowed several issues down and in the process has raised many more, (e.g. the long-term and synergistic effects of toxicants in the estuary). As the program moves into its implementation phase, it will be important both to expand and to refine our knowledge about the potential effects of specific pollutants in the watershed.

In our report, we note that proposed federal legislation (S. 431) provides financial support for continued research. Given the national importance of the Bay and the general applicability of the research, we believe federal funding is appropriate.

Question 6. What are your thoughts on directions the agency/states should take in terms of maintaining the Bay program data base, water quality monitoring, and clean water implementation strategies beyond September 30?

Answer. Much of the value of the CBP data base remains untapped. To fully utilize this resource, it will be necessary to expand upon the present system by adding both high quality data not yet included as well as new research and monitoring data. Accomplishing this task will require a reliable source of funding through the foreseeable future. We believe that funding for the data base is the joint responsibility of both the federal government and the states.

Abatement strategies to achieve clean water will be the subject of the forthcoming Management Report. It is clear now, however, that these strategies will have to include curbing nonpoint source pollution, upgrading the removal capability of sewage treatment plants, and controlling the introduction of toxic pollutants.

Question 7. From the work products you have seen, do you believe the program has identified clearly the causes of decline in rockfish and oysters? If so, what are the causes and in what EPA publication are they identified?

Answer. Establishing a precise cause and effect relationship in a system as complex as the Chesapeake Bay is extremely difficult. To date, the program has only been able to demonstrate that marine spawning fish have been increasing in abundance, while freshwater (Chesapeake Bay dependent) spawners have declined. This finding implies that changes in the habitat of the freshwater spawners have adversely affected their ability to compete in the Bay.

This question points up the importance of the CBP data base and the need for a well-designed, thorough monitoring program. We have been acquiring "data" on the

Bay and its fisheries for many years. Unfortunately, the historical data have limited value from an analytical standpoint. Only by designing a monitoring and research program to answer this kind of question, and maintaining the program for a considerable amount of time can we hope to answer this kind of question with any reliability.

Question 8. Your statement mentions an Environmental Law Institute review of existing bay management mechanisms. Was it useful? Worth the money?

Answer. The utility of the Environmetal Law Institute Study has been seriously reduced by two factors. First, the study was completed in December of 1980, a full two years before the completion of the first draft of the management report. Much of the information contained in it was therefore out-of-date and not particularly useful in developing new management strategies. Secondly, the document has never been circulated through the Bay community in any comprehensive fashion. It is unfortunate that it was not made widely available during the time when its contents were up to date. However, this mistake has been compounded by the fact that the study, even today, when some of the information is still useful, is not readily available.

Question 9. On page 6 of your statement you make two statements with regard to agricultural practices and their effect on the bay which I want to understand clearly. First you say that the Bay program has found erroneous the theory that no till farming practices were harming the Bay due to the runoff of herbicides which are used on crops in conjunction with no till farming. Further on in your statement, however, you note that the Bay program's findings of nutrient enrichment to the Bay are costing the agricultural community money due to excessive fertilizer losses which may constrain future farm productivity.

Answer. It is generally accepted that, no till and minimum till cropping practices with proper crop rotation and winter cover crops are preferable to traditional deep plowing for maintaining soil health and long term productivity. As we stated in our report, CBP research indicates that a great deal of the nitrogen entering the Bay appears to originate from cropland. Presently, a considerable number of the farmers in the basin are not now using these cropping practices. In addition, fertilizer use on all types of cropland, no till, minimum till and conventional has increased greatly in the last decades. This increase is in large part responsible for the high productivity of U.S. farms. However, the apparent loss of nitrogen into the Nation's waters implies that a considerable portion of the fertilizer applied does not add to the farmer's productivity. This phenomenon is not the result of wanton waste. At this time, no readily available method exists for determining the optimum application rate for nitrogen on various soil types and crops. Clearly, developing such a method should be a high priority of both USDA and EPA.

While it is true that herbicides do not appear to overtly affect the Bay's submerged grasses, this does not imply that they have not had some detrimental effect. However, it appears that no till and minimum till with herbicides is preferable to conventional till with heavy loss of top soil and fertilizers.

Question 10. Is EPA doing enough in its continuing abatement regulatory program to protect the Bay?

Answer. No. In CBF's opinion, EPA has failed to demonstrate a strong commitment to proctect the Bay. EPA's proposals and actions have resulted in reduced technical and financial assistance, the imposition of increased administrative burdens on the states, and the relaxation of standards and regulations.

EPA's proposed budget for fiscal year 1984 reduces state environmental grants by $60 million—a 26 percent reduction from fiscal year 1983. Maryland, which relies on federal money for 58 percent of its water management budget, will lose, for example, $514,000 in Section 106 money, the grant program for water pollution control and enforcement activity. This reduction means fewer technical people to review permit applications, write permits, inspect facilities, and bring enforcement actions.

At the same time, EPA has proposed or adopted regulations that will significantly reduce the strength of existing standards. For water quality standards, for example, EPA has proposed regulations that would allow the downgrading of the designation of waters and allow certain economic waivers for industry. Adoption of these and other regulations will not only lead to reduced water quality but they will also greatly increase the administative burden on the states who will be the ones to implement these regulations.

Question 11. All the emphasis of Bay program products seems to have been on nutrients. I'm worried toxics are equally important and haven't gotten the headlines. Does the EPA regulatory program sufficiently address toxics in the Bay?

Answer. The presence of toxic pollutants in the Bay, at alarming levels in certain parts of the Bay, is of vital concern. EPA's slackened commitment towards environmental protection generally, addressed in the preceding answers, pertaints with equal force to regulatory programs for toxic pollutants. It should be noted, however, that, with respect to the discharge of toxic pollutants, the states have the principal responsibility in adopting water quality standards for specific toxicants, in writing NPDES permits, and in ensuring compliance with these permits. To the extent that toxic pollutants are inadequately addressed, the states must share with EPA this responsibility.

Senator MATHIAS. We will now invite Mr. Peter Bibko, Region III Administrator for the EPA, to come to the table.

We are very happy to have you here, Mr. Bibko.

TESTIMONY OF PETER N. BIBKO, REGION III ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY GREENE A. JONES, DIRECTOR, WATER MANAGEMENT DIVISION; LEN MANGIARACINA, DEPUTY DIRECTOR, WATER MANAGEMENT DIVISION; VIRGINIA TIPPIE, SENIOR TECHNICAL ADVISER; TUDOR DAVIES, DIRECTOR OF PROGRAM MANAGEMENT AND OPERATIONS; AND ROBERT COLLINGS, COUNSEL

Mr. BIBKO. Thank you, Senator Mathias, members of the subcommittee, Will Baker, ladies and gentlemen. Good morning.

Senator, I have submitted to the subcommittee staff a copy of my prepared testimony addressing those points on which I was asked to comment before the subcommittee.

Senator MATHIAS. Your full statement will be included in the record.

Mr. BIBKO. Thank you, Senator.

I would, with your permission, Senator, take a few moments to summarize the text that I have submitted to you.

I am Peter Bibko, Senator, Regional Administrator of the Environmental Protection Agency, Middle Atlantic Region, headquartered in Philadelphia. And it truly is my extreme pleasure to be here today to discuss the Chesapeake Bay program as implemented by region III of the Environmental Protection Agency and as it has been implemented by EPA headquarters over the years.

With me today are other agency officials with current or past responsibilities for the bay program. Greene A. Jones, who is our Director of the region's Water Management Division, is here today. Greene currently directs the bay program under my direction from Philadelphia. He is responsible, Senator, among other things, and in addition to his direct Chesapeake Bay involvement, for running the region's water quality standard revision process and pollution abatement program.

Lenny Mangiaracina is Mr. Jones' Deputy. Lenny was the original bay program director and has been made available to Greene to help him direct the Chesapeake Bay program from this point on.

Virginia Tippie, Senator, as was correctly pointed out by Mr. Baker earlier, is serving as the Chesapeake Bay program senior technical advisor. To clarify the point raised by Mr. Baker, Senator, although this is Virginia's official title, I want to assure you and the subcommittee that Virginia Tippie is in charge of all technical aspects relating to the closeout of the Chesapeake Bay program and, as may be required, any ongoing efforts involving the Federal-State partnership of a technical nature after September 1983.

I would also like to point out that I have with me today, in order to be most responsive to any questions you may have of me, Dr. Tudor Davies, who, as you know, Senator Mathias, was the former Director of the Chesapeake Bay program and is now on the staff of the Assistant Administrator for Water. This is very important, Senator, because the additional moneys appropriated by Congress for fiscal 1983 were under abatement; and Mr. Eidsness, to whom Mr. Davies reports, is the Assistant Administrator for Abatement Programs, for whom Mr. Greene Jones also works.

I also have with me, Senator, Robert Collings. Bob is Assistant Regional Counsel. He, frankly, will be very helpful to me as Regional Administrator in looking at ways to successfully implement the results of the Chesapeake Bay management strategies, assuring continued health of the bay from a legal perspective.

Senator, several months ago I assumed the chairmanship of the Chesapeake Bay Program Management Committee and have devoted considerably more time to Chesapeake Bay affairs than was possible earlier last year. I want to be very frank and straightforward with you on this, Senator. I assumed this direct role in the program because of what was at the time widespread concern that EPA might fail to timely deliver program products that were mandated by Congress.

While many important management decisions are yet to be made, I can tell you, Senator, that EPA and the bay States, I believe, are very firmly committed to meeting this important mandate.

Although I have not yet personally studied in detail Mr. Baker's written statement, in its final form, I believe from what I have heard today that EPA is in general agreement with the Chesapeake Bay Foundation on the significance of the bay program's findings and on the need for a continuing Federal role under the Clean Water Act in bay management.

I would like to add that Mr. Baker's participation in the last several management committee meetings has been extremely constructive and is sincerely appreciated by EPA. We will certainly continue to look forward to Will and his people's presence at all upcoming committee meetings. I think this is something that should have occurred long before it did.

Before discussing the national implications of the bay program from our perspective, Senator, I want to summarize how I believe EPA has already responded and plans to respond to the, as I characterize them, five broad congressional mandates for the bay program.

For the record, Mr. Chairman, the subcommittee has been provided with a chart showing how we spent or intend to spend the appropriations to which you referred in meeting our congressional mandate.

Has that been submitted, Larry?

Mr. Teller. Yes.

Mr. Bibko. They have been submitted to you, sir.

The first mandate, Senator, as we perceive it, that we were asked to direct our attention to, was to assess the principal factors having an impact on the bay as perceived by scientists and users. EPA, through selected scientists and research institutions, has conducted and synthesized some 40 research projects addressing three primary areas—toxins, nutrients, and submerged aquatic vegetation—as indicators of general bay health and stability. The findings of these technical studies, which were submitted to Congress in September 1982, have been reviewed and discussed with the bay scientific community, with local government, bay residents, through the Citizens Program for the Chesapeake Bay, Inc., and its resource user management team.

The final scientific reports will be available in the near future. Primary dissemination will be through the National Technical Information Service.

We are also evaluating your suggestion, Senator, to provide copies of the full reports to selected research laboratories on the bay and will report to you on that. A summary of scientific findings has been included in the testimony which has been submitted to you, sir.

The second mandate Congress asked the agency to address, Mr. Chairman, was to establish mechanisms for collecting, storing, analyzing, and disseminating environmental data. I believe the Environmental Protection Agency has well met this mandate. EPA has collected more than 3 million data points and inventoried all usable existing bay data bases consistent with congressional directives. This extensive natural resource data base is now fully functional and quality assured and will be permanently stored in a computer system to be located at our Annapolis laboratory.

We have also developed a complementary series of bay water quality models to assist in analyzing future bay management strategies.

To assure appropriate dissemination and use, we have also undertaken necessary technology transfer and training of State personnel and other users. This will be completed prior to the termination of the bay program in September.

Another mandate Congress asked EPA to address was to analyze available environmental data and implement methods for improved data collection. Again, Mr. Chairman, I sincerely believe that we have well met this mandate. Efforts to store and collect information, which I have already described, in addition to these efforts, we are now conducting an inventory of all other agencies that currently monitor the Chesapeake Bay or who have performed extensive research on the bay. The data collected by these agencies, combined with our own data collection efforts will, I believe, allow us to locate any gaps in our current inventory of information and to recommend appropriate monitoring programs to both fill these gaps and effectively track the progress of future bay pollution control programs.

Because of your frequent reminders of the importance of continued monitoring, I want to add that a monitoring team has been established——

Senator MATHIAS. That is very politely phrased, my frequent reminders. [Laughter.]

Mr. BIBKO. Thank you, sir. They were heeded, Senator, as was the extensive conversations and input that you gave us while we met with Deputy Administrator John Hernandez.

For your information, Senator, one of the main things to come out of that meeting, from my perspective as Regional Administrator, was a firm directive from Dr. Hernandez to pay particular attention to the monitoring aspects of the program as a means of making sure that our abatement program, which is a product in part, of the mathematic modeling, is kept on an even track. That is to say, if we were to spot things from year to year that resulted in reasons to readjust our abatement program, monitoring would be the only way to do it. Your comments were genuinely heeded, I believe.

In any event, Senator, the monitoring team to which I referred has been established. It is comprised of representatives of both State and Federal agencies and the bay scientific community. The team is developing a strategy focused on ecosystem concepts and will soon outline the level of monitoring effort and expected costs.

The management report will provide specific recommendations for improved monitoring programs, including scope and frequency, at selected locations.

I am firmly committed, Mr. Chairman, to a sound, multistate monitoring program that allows us to track our progress in protecting the bay.

Third, and perhaps, in my opinion, Mr. Chairman, one of the most important congressional directives was that EPA should propose alternative control strategies to insure the long-term protection of Chesapeake Bay. EPA, as I mentioned a moment ago, has developed an extensive and innovative water quality model for use in doing this in the Chesapeake Bay.

The relationship between the water quality parameters and living bay resources will be outlined in our characterization report. The report will assess the current conditions and historical trends in the bay as well as create a data management system which includes all historical data bases used in our analysis, together with all new data collected. The preliminary findings of the characterization report, which are summarized in my formal testimony, provide the environmental benchmarks which will be used in the management report for evaluating the environmental and economic impacts of alternative abatement strategies which we may propose for consideration by the States.

The newly developed capabilities in modeling, mathematical modeling, and data base management, coupled with the extensive data collected by the program will, I believe, provide management agencies the initial control strategies needed to assess impact on the bay and on the community.

For example, Senator, Mr. Chairman, the models will have the capability to predict for varying point to nonpoint source control strategies different levels of nutrients which would be expected in the bay. When this information is tied with known levels of water quality needed to sustain uses that we all agree must be sustained in the bay, it will give us the ability at long last to use the extensive research base we have developed to begin to control the bay and uses in the bay.

This critically important work product will allow our bay States to establish and coordinate water quality standard revisions needed to protect the bay.

Lastly, Mr. Chairman, Congress and the committee asked us to define and improve bay management coordination mechanisms. Mr. Chairman, I believe that there is no more important accomplishment of the Chesapeake Bay program than the enhanced cooperation between the various groups interested in the bay, between industry, between the users of the bay, and most important, the tremendous progress that has been made in establishing cooperation and commonality of interest among the States.

Several years ago, in recognition of the diversity of concerns on the bay, EPA established a management committee which includes senior environmental management officials of the majority of States concerned with the Chesapeake Bay; in other words, the bay States. It included users through the citizens program and, of course, the Environmental Protection Agency. The committee has and will continue to participate in all program actions and in all program decisions, including the planning, technical analysis, data compilation and processing, report writing, and review and implementation of program findings.

These officials, Mr. Chairman, also serve an important liaison function.

The management report will analyze appropriate postprogram management mechanisms and promising options for consideration by the States and EPA. The management report will also examine the feasibility and costs of point and nonpoint pollution control and will suggest needed abatement and policy changes where appropriate. It is fully anticipated that a direct result of the report will also be an action plan with specific steps for the States and EPA, to be further discussed at the Governors' Conference later this year.

We will also sponsor a series of workshops through the spring and summer to discuss the findings of the program, to build a consensus for action and lead us to the Governors' Conference.

Because the management report is not yet complete, Mr. Chairman, it is premature to speculate about the liaison management entity that will finally be established or recommended by EPA to be established. I can tell you, Mr. Chairman, however, without reservation, that EPA is fully committed to insuring that the results of the program are used effectively in the implementation phase through our established water quality management programs. Most important, EPA will provide the continuity required after September 1983 to assure timely implementation of abatement alternatives.

Mr. Chairman, in conclusion, I believe that we are currently on schedule toward a successful completion of the Chesapeake Bay program by September 30, 1983. I believe the upcoming response from the Administrator of the U.S. Environmental Protection Agency to your letter concerning the current year's activities and budget will demonstrate to the subcommittee that the transition process to the States is already underway and that this money is being well spent. It will also demonstrate to your satisfaction, sir, that the program will be successfully completed consistent with congressional directives by September 30, 1983. The major transition activities undertaken by the bay program this year include:

One, the establishment of the data base management systems and analytical capabilities to which I earlier referred.

Two, the training of State and Federal staff needed to complete the transition implementation phase of our activities.

Three, enhanced computer capabilities in place at our Annapolis lab for use by EPA and State people concerned with using mathematical models to adjust effluent limitations needed to protect the bay.

Four, a comprehensive outreach program to the bay community.

Five, an array of postmanagement strategies and coordination mechanisms.

Mr. Chairman, I firmly believe, too, that the States fully support the current budget and transition activities and are taking steps necessary to meet their particular financial commitments in this part of the program. The management report will both review alternative management schemes and strategies that I have mentioned, and recommend, where appropriate, new institutional and procedural mechanisms so that the Federal investment in the bay program leads to a timely and effective abatement action.

We believe that the research phase of the Chesapeake Bay program is slowly but surely, and hopefully smoothly, merging with an ongoing and equally important abatement phase of the program that now lies ahead: Fighting the problem and solving the problem.

I want to emphasize, that because of the general authority provided by the Clean Water Act, we believe we are currently laying the foundation to incorporate the results of the program into our normal water quality management program activities in Philadelphia. These include the national pollutant discharge elimination system, effluent permit program, review of dredging locations and methods under the Army Corps of Engineer's 404 permit program, priority issuance of construction grant programs, and water quality standard review and approval programs.

Mr. Chairman, I want to reemphasize that EPA is firmly committed to working as a partner certainly with Congress, with the States, and with local governments, to assure that sound management practices are finally implemented on Chesapeake Bay. I believe that the broad array of our activities which I have outlined demonstrates that we are effectively responding to the mandate of Congress as best we can in this uncertain area of ecological research and melding a new marriage of ecological research and abatement action.

Let me reaffirm EPA's full commitment to: One, successful completion of the Chesapeake Bay program and subsequent implementation, in cooperation with the States and bay community; and two, disseminating the vast wealth of scientific and management findings of the program nationwide, as needed, to help other people similarly situated with similar problems throughout our Nation.

At this time, Mr. Chairman, I would ask that any questions you might have, be directed either to me or, at your choice, to any of my colleagues assembled here today.

Before turning it open to questioning, if I may make my final statement in response to a statement that Mr. Baker made a moment ago. He stated that a Liaison Office might not be necessary if we at EPA did our job of requiring States to implement protective strategies under the Clean Water Act.

I both agree and disagree with Will's statement. I can assure you, Mr. Chairman, that now that we finally have abatement strategies, as a result of the research you helped sponsor; and we will see that those strategies are implemented. Up to this time we have not had the strategies to work with, nor have the States had the strategies to work with. That has been the fruit of this labor. Now that we have them, we will fulfill our responsibilities under the Clean Water Act. We work closely with the States, and I can assure you these strategies will be implemented working with the States.

I disagree with Will's comment that even though we have the mechanism to assure compliance that we would not need liaison with the community. Having the authority under the Clean Water Act to get something done is one thing. Getting it done quickly and timely for the protection of the bay is another thing.

I would rather have a cooperative spirit of understanding exist, that would result from good liaison with bay people, than run the risk of getting involved needlessly in protracted litigation trying to enforce a particular water quality standard from Philadelphia on the States. So, therefore, we would welcome continued liaison with the bay community and all those who have been involved in getting us as far as we have come today.

I thank you, Mr. Chairman, for giving me this opportunity to address you.

Senator MATHIAS. Thank you, Mr. Bibko.

There is a possibility of another roll call vote in the next few minutes. I might ask Senator Sarbanes if it is agreeable, I will go ahead with a few questions. If the bell should ring, do you want to go immediately and vote and then you come back and take over?

Senator SARBANES. Let's see how late it is. I may not be able to return.

Senator MATHIAS. Also, I would want to express my appreciation to the Members of the Senate from Virginia who have shown an unusual interest in the Chesapeake Bay. As you know, Mr. Bibko, Senator Warner was with us on our tour of the Potomac. He has shown an extraordinary interest and activity with regard to the preservation of the bay.

I want to reserve for Senator Warner the opportunity to make a statement and to insert at this time a statement on the part of Senator Trible.

[Senator Trible's statement follows:]

STATEMENT OF SENATOR PAUL S. TRIBLE, JR.

Mr. Chairman, I'm pleased to be able to participate today in your oversight hearings on the Environmental Protection Agency's Chesapeake Bay Program. I've followed the progress of the program over the six years I've been in Congress with interest.

I've been deeply concerned about the Bay situation. As you know, my home is on the Rappahannock River. I remember the enormous flock of water birds and the profitable fishing industry that existed on the Bay when I was growing up in the Northern Neck. And I have witnessed their decline.

The Chesapeake Bay program can point to number of achievements. These deserve recognition.

It's obvious to a casual observer that increasing development in the Bay watershed area, combined with extensive commercial shipping and recreational boating, contribute to the deterioration of the Bay's water quality. It doesn't take a scientist to figure that out. However, until the Bay Program's comprehensive quantification of pollutant sources and levels, it was difficult to identify the major problems.

The CBP has done an excellent job of identifying both point and non-point pollutant concentrations and their effect on the Bay's ecosystem. Findings on increased nutrient loadings and the decrease in bay grasses and wildfowl stocks; increases in toxics and metals concentrations and the decrease in oyster harvests and fish catches, are representative of the CBP's excellent analyses.

Moreover, the CBP has been an excellent example of intergovernmental cooperation. Citizen's and environmental groups, private businesses and academic organizations have cooperated in the program's findings with amity.

Virginia, Maryland and, more recently, Pennsylvania, have been drawn into a partnership to foster the goal of preserving the Bay's richs for future generations.

These are significant achievements, and the EPA should be proud of the Bay Program's study phase. However, I would suggest to the agency that failure to complete the remaining Characterization Report and the final Management Report is trying the patience of the Congress.

The valuable research must be made available. The $27 million appropriate to date is more than adequate to bring this work to fruition.

I cannot emphasize strongly enough how important it is for the final two reports to be submitted to Congress no later than the beginning of this summer. Congress clearly intended EPA to develop appropriate programs and implement a clean water strategy for Chesapeake Bay this year, 1983.

In summary, Mr. Chairman, I share your conviction that it's vitally important for the Bay Program to complete and submit to Congress the final reports in a timely manner. It should contain whatever decisions and recommendations are appropriate. We must conclude the study of Bay pollution sources and their impact. We now know where the problems lie. We have to move beyond studying the situation to doing something about our deteriorating Chesapeake Bay.

Senator MATHIAS. Just so that my own mind is clear on the subject of exactly who is in charge, you say that Virginia Tippie is in charge of the closeout I think was what you said just now. But who is making policy? What is the first level of policymaking as far as the bay program is concerned?

Mr. BIBKO. I am directing the policy of the bay, program Senator. Virginia is responsible for all technical aspects of the program in closing it out. Greene Jones has administrative responsibilities to make sure that our budget is complied with, to make certain to me that the products of the study are completed in timely fashion, and he works with Virginia. But, as to how they are being done, it is Virginia's direct responsibility, because she represents the thread of continuity in the program that we need in Philadelphia to get on board.

Senator MATHIAS. How many staff do you have in Annapolis and how many in Philadelphia that are related to this project?

Mr. BIBKO. Senator, we still have five positions in addition to all the consultants in Annapolis, and some six or eight people in Philadelphia who are spending all or different parts of their day on the Chesapeake Bay program.

Senator MATHIAS. Among those frequent reminders that you mentioned in your testimony has been the expression of concern from Members of Congress, not only myself, over the hiatus in the program that was due to the absence for about 3 months of a full-time Director. It was suggested that you engage some outside help to prepare management options for the bay, early this year, and that you also obtain the services of an environmental mediation service, which would share those options with the people that would be affected and which would negotiate with them some strategies to which the whole community might commit itself.

I understand that you did in fact engage the services of Mr. Thomas Jorling and Mr. George Alexander, who will be preparing management options. I am wondering when we can expect to see their report.

Mr. **Bibko**. Senator, as I understand the situation, Virginia asked me whether or not I would approve working with the consultants. I concurred because Virginia assured me their expertise was needed to review her product, or our product, when it was completed, and that we would, of course, rely heavily on their review in forming our final opinion on the particular strategies that we would recommend. I would imagine that their input would be a part of the final report after they have had an opportunity to review our draft management strategy.

Senator **Mathias**. What concerns me in your answer is that it sounds to me as though this will be some time in the future. And if we are going to be picking up this load as of September 30, there has to be a period of time to study the report, to get general acceptance of it, to amend it, and otherwise get commitments to it. And if that report isn't available until mid-September, that isn't going to happen and you are going to have another hiatus. You are going to have another gap in activity.

Mr. **Bibko**. May I respond, Senator? The hiatus that you refer to is going to most certainly occur no matter what we do. I think that the early availability of the draft management study to these consultants will be helpful in helping us finalize the strategies.

Senator **Mathias**. It will be less of a hiatus and less of a gap if you get the report out early than if you get it out late.

Mr. **Bibko**. Well, Senator, it will be out by September 30. It is such an important report in that we are going to be basing the various control strategies on it. There strategies are going to have economic repercussions, and thus we want to take great care in putting out this report. Frankly, I want to make sure that the criticism we received on the draft is not repeated; that is, that we are as specific as possible.

Senator **Mathias**. I must tell you that I would be disappointed if it is not out until September 30, because this committee expected it in January. As far as we are concerned, it is really overdue now.

Mr. **Bibko**. Senator, that is correct. I agree 100 percent that you are right. It is technically overdue now. The reason that it has been late is that we found a need over a year ago to take a closer look at water quality associated with the program before coming up with the final management strategy because we want the final alternatives to be sufficiently specific to mean something, to be implemented by the States, and we didn't want general statements of direction. We wanted specific strategies to hand the States and ask them to choose among these strategies.

Senator **Mathias**. I have to disagree with you that there has to be a hiatus. That is going to depend a lot on what happens between now and the next couple months.

What about the environmental mediation service? Has that been engaged?

Mr. **Bibko**. Senator, if I may, the hiatus I was referring to—maybe I didn't make myself clear—is the hiatus which would normally occur between the closeout of the program, the statement of clear, recommended strategies, and the time that the States would complete the implementation process.

As I understand the law in this area, Senator, the States would be required to revise water quality standards, a formal process involving a rather extensive public participation, and be required to submit revised criteria to EPA. EPA would then approve the revisions, and these would be used as a basis for reviewing effluent limitations going into the bay.

Now, this process is going to take a long time. It is my commitment, sir, that the strategies will be firm as of September 1983 and the computer facilities and staff will be in place for the States to immediately begin the modeling runs and everything else needed to begin to propose water quality standards revisions.

Senator MATHIAS. What about the mediation?

Mr. BIBKO. On the mediation, sir, that is something that I think the bay committee is still considering. Whether or not this is a situation that lends itself to mediation is something that can be addressed. I think the time to make a decision on that would be after we have gotten the management report and talked to people who are involved in environmental mediation to see if it is something——

Senator MATHIAS. I really thought you had made a commitment to go forward with the mediation service.

Mr. BIBKO. Senator, I am sorry; I don't believe I have specifically committed to that. Again, we felt that the ongoing, existing consultants that we had on board were sufficient to finish the management study. As to mediation, I am not commited against mediation. It is just that I have not specifically been formally asked, other than your mentioning it, to provide mediation.

Senator MATHIAS. What about the establishment of the Office of Chesapeake Bay Liaison?

Mr. BIBKO. As I said a moment ago, Senator, I think we need liaison in Annapolis. I assure you that we will have sufficient personnel in Annapolis, as will the States, to continue the liaison beyond September 30, 1983, and to assure coordinated response among the States.

Senator MATHIAS. Can you tell us now how many positions you expect to assign to that office and on a full-time basis?

Mr. BIBKO. Senator, I cannot tell you exactly how many because we haven't completed the management study yet and we don't know exactly how many will be required. However, I can say, Senator, that we will require computer help. We will require a person very, very knowledgeable in the technical aspects of the program. And we will require sufficient support personnel to interact with our regional abatement people and with the States. Also, we will require people from the States.

Senator MATHIAS. Do you anticipate it will be in Annapolis, or where?

Mr. BIBKO. Yes, sir. The liaison office would be located in Annapolis. It has always been my intention to do that.

Senator MATHIAS. Would you anticipate that some of the personnel who are now in the program might be assigned to the liaison office?

Mr. Bibko. Yes, sir. I would anticipate that. That is a very distinct possibility.

Senator Mathias. Looking at the 1984 budget, I don't see this reflected. I am hoping it is buried down somewhere in the budget provision for this.

Mr. Bibko. Senator, as you know, I have taken a position for some time that I see a regional responsibility to the Chesapeake Bay associated with this abatement phase, in all due respect, sir, irrespective of how the national budget may or may not be delineated.

We have an obligation to assist these three States in helping them revise water quality standards, and we intend to supply the manpower needed to fulfill that obligation.

Senator Mathias. You have talked about the current fiscal year funding as a transition year to the States. That makes me just a little nervous. Handing over entirely. I am hopeful that what you have just told us about the ongoing liaison activity reflects the continuing responsibility of EPA in this situation.

Mr. Bibko. Senator, I can assure you, please, let me personally assure you on behalf of the agency that the Chesapeake Bay program will be timely finished and that we will work very closely with the States to make certain that the fruits of the program are implemented.

Senator Mathias. So the end of the research program certainly is not the end of EPA responsibility for the Chesapeake Bay.

Mr. Bibko. That is correct, sir. It certainly is not.

Senator Mathias. And there is a continuous obligation to implement clean water strategies.

Mr. Bibko. There certainly is, sir.

Senator Mathias. One of the interesting facets of Mr. Baker's report, it seems to me, was a characterization that over half of the nutrients entering the bay come from nonpoint sources. No. 1, do you agree with that?

Mr. Bibko. Well, I can't comment on a precise number, but yes, I agree that a very significant portion, it certainly could be over half, depending on the area, comes from nonpoint sources.

Senator Mathias. I am wondering, perhaps you would prefer to supply this for the record, but what types of nonpoint sources has the program identified as the biggest contributors? You can supply that for the record.

Also, based on your expertise in environmental protection, what are the types of land use strategies that we should be thinking about to control these nonpoint nutrients?

Mr. Bibko. We will be happy to supply that, Senator.

Senator Mathias. The rollcall which I anticipated is now in progress. We will take a brief recess. Senator Sarbanes will be returning. We will resume with questions. I will submit further questions to you for the record and request that you respond to them. That will be included as a part of the record.

Senator Mathias. The committee will stand in recess until Senator Sarbanes returns.

[Brief recess.]

Senator Sarbanes [presiding]. Mr. Bibko, how much has the EPA spent on this effort thus far?

Mr. Bibko. I believe some $27 million, Senator.

Senator Sarbanes. What is your strategy for realizing the greatest return on that investment of money as we look forward to the future?

Mr. Bibko. To establish mechanisms that go beyond September 30, 1983, which will facilitate the expeditious cooperation among the bay States and others in implementing controls needed to result in conditions in the bay that will allow the uses to continue. In other words, to assure——

Senator Sarbanes. Do you envision EPA being an essential part of those structures?

Mr. Bibko. Yes, Senator. I view EPA as the most essential part, regardless of the additional help that we get from the bay users and other people interested in the bay and the cooperation among them.

Senator Sarbanes. With respect to the updating of the studies and the continuous maintenance of the data base, do you regard that as an important objective?

Mr. Bibko. Yes, Senator, I regard it as a very important objective in that it will be necessary to readjust our thinking perhaps from time to time as may be indicated by the results of monitoring studies.

Senator Sarbanes. You kept talking about closing out. I wasn't sure exactly what that phrase was meant to encompass, because the answers you have just given-hopefully-would indicate that you don't intend to close out.

Mr. Bibko. Senator, as a research scientist who has worked with striped bass on my doctoral thesis, it is hard for me to separate from that feeling and that of being regional administrator. I think my statements could be explained as follows.

There is a research phase to the program where, with the help of Congress and the funding of Congress, we have completed what is perhaps one of the very best ecosystems studies in the world. That research phase, collecting the raw data, the water quality data, the data on the submerged aquatic vegetation, the phytoplankton, embryo, and larvae distribution, is all now collected in our computers. We put together the model needed to show the impact, the cause-effect relationship, and it is that phase which is now just beginning——

Senator Sarbanes. Are you doing the annual water quality study this year in the bay?

Mr. Bibko. This year we are beginning the first step in establishing a coordinated water quality and perhaps biological monitoring program that will be needed to be implemented by the States in the years to come. We have taken the money——

Senator Sarbanes. That wasn't my question, if I am following that answer carefully, and I think I am. My question is, is EPA doing a water quality study this year?

Mr. Bibko. To my knowledge, Senator——

Senator Sarbanes. The Chesapeake Bay doesn't stop, you know, when your research stops. It continues. It is an ongoing organism.

Mr. Bibko. Senator, may I——

Senator Sarbanes. What are you doing to stay abreast of it?

Mr. **Bibko**. May I ask Virginia Tippie to—ask if you would like Virginia Tippie to address that question as to what we are doing this year and what the States are doing in water quality management?

Senator **Sarbanes**. I would be happy to hear from Ms. Tippie, but I would like to know from you what you are doing. I understood you to respond to Senator Mathias earlier that you are the policymaker on this matter. Is that correct? I think he asked you a question about that and you said, "I am the policymaker."

Mr. **Bibko**. At EPA, yes, sir, that is correct.

Senator **Sarbanes**. I will hear from Ms. Tippie in just a minute. What is your response to my question?

Mr. **Bibko**. My response, Senator, is that we now have a very extensive data base, including very extensive water quality information, to which you refer. We have spent this year and continue to attempt to develop a very well-thought-out monitoring program that will be run from this time onward. In other words, we don't feel there is as much of a need to monitor water quality this year since we have been doing that for the past 5 years on and off, and certainly within the past 2. What is needed now——

Senator **Sarbanes**. Wait a minute. Now Senator Mathias and I and Senator Warner and a number of Members of the House wrote to you about your current appropriation of $900,000; is that correct? Do you recall that letter?[1]

Mr. **Bibko**. Yes, I do.

Senator **Sarbanes**. In that letter we indicated the Congress in effect earmarked those monies for certain purposes; is that correct?

Mr. **Bibko**. Yes, sir. That is correct.

Senator **Sarbanes**. How much of it did they earmark for water quality sampling to build on the existing data base?

Mr. **Bibko**. I believe the number was $400,000 for monitoring.

Senator **Sarbanes**. Almost half of it. Now, has that been spent on water quality sampling?

Mr. **Bibko**. That is being spent on establishing the water quality monitoring program, yes, sir.

Senator **Sarbanes**. You are building on the data base through this sampling?

Mr. **Bibko**. As to that question, Senator, I really would like to defer to Virginia Tippie. But if I may——

Senator **Sarbanes**. I want to get clear what your own commitment on all of this is. I mean, do you regard this now like when you do your doctorate, which was the reference you used earlier, it sort of ends? You submit it and if it meets muster, then you get your Ph. D. and then off you go. You might later do something with it or might not. Is that what is going to happen on this $27 million we have invested in the bay?

Mr. **Bibko**. No, Senator. It is just the beginning.

Senator **Sarbanes**. What do you think of Senator Chafee's proposal in that regard, if it is just the beginning? And that is not a bad response to that question. What about this proposal of Senator Chafee's in the Clean Water Act, which would really, it seems to me, commit us to carrying through on this thing in a cooperative fashion. Does it not strike you as seeking to achieve that?

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[1] See p. 145.

Mr. **Bibko**. To the extent that the beginning of implementation, that is starting to abate and using the research data we have, is going to be furthered by Senator Chafee's bill to which you refer, I would endorse it. To the extent that it——

Senator **Sarbanes**. So you are supportive of it, I take it.

Mr. **Bibko**. I am supportive of anything that advances the abatement and implementation phase.

Senator **Sarbanes**. It clearly does that, doesn't it?

Mr. **Bibko**. Well, if by research, Senator, Senator Chafee means getting additional information needed to adjust our model, additional information to tell us if we are on track—that is, monitoring type information—then I would support it, although I certainly couldn't comment on the amounts of money that are specified in there because our management study is not yet completed. We at this time do not know the extent of additional verification that we will need, nor will we know, I don't believe, until we are well into the first year of implementation.

Senator **Sarbanes**. Assuming your management study indicated the need for amounts in excess of the amounts stipulated here, in accordance with the Chafee ratio, on 55-45, I take it you would be supportive of his proposal. I mean, I understand your qualifying it, but assuming that the management report and the implementation strategy embraced figures of that magnitude, so that these fell within the ratio, you would be supportive of this proposal, I take it; is that right?

Mr. **Bibko**. Well, I would certainly have to look at the management report, but if the management report did indicate that certain moneys were needed in order to do certain things needed to protect the bay, I obviously would be in favor of it.

Senator **Sarbanes**. So you are supportive of the Chafee proposal?

Mr. **Bibko**. Senator, I am not sure I can make that broad a statement because I don't know if I really understand the Chafee proposal.

Senator **Sarbanes**. How can you not understand it?

Mr. **Bibko**. Well, I don't know what—I guess research would be my first question. There is a fine line, Senator, between monitoring and research. You can go out and pull a water sample——

Senator **Sarbanes**. Have you reviewed his proposal?

Mr. **Bibko**. I have reviewed a bill that is labeled S. 431 that discusses research.

Senator **Sarbanes**. Have you reviewed this proposal, S. 431?

Mr. **Bibko**. No, sir; not officially on the part of the agency. That isn't my direct responsibility. I reviewed it——

Senator **Sarbanes**. Have you reviewed it as a regional administrator who is concerned with the Chesapeake Bay study?

Mr. **Bibko**. I have reviewed it, yes.

Senator **Sarbanes**. As a policymaker on the Chesapeake Bay study?

Mr. **Bibko**. Yes, Senator. I have read S. 431.

Senator **Sarbanes**. Don't you think it represents a constructive approach to realize something on our investment thus far of the $27 million in this study?

Mr. BIBKO. Well, Senator, I really can't say until I know what is needed, and I won't know what is needed until the management report has been finished.

Senator SARBANES. Assuming the management report indicates that we need to spend some significant amounts of money with respect to improving the quality of the bay, do you have any difficulty with the approach contained in here for sharing the implementation between the Federal Government and the State government?

Mr. BIBKO. Well, personally, Senator, or as a——

Senator SARBANES. Yes.

Mr. BIBKO. Well, personally, I think there are other mechanisms I want to look at first. Again, I am not a spokesman for the Administrator.

Senator SARBANES. Like what?

Mr. BIBKO. Sections 205(j) and 205(g) of the Clean Water Act provide water quality moneys to be used by all the States. Some States are landlocked. They don't have a bay. I just question how we would treat those States. The issue is much broader than I have jurisdiction over.

Senator SARBANES. I thought, though, in your statement you were making a point of the precedent-setting and model nature of the Chesapeake Bay study and the opportunities which it offered. Is that not correct?

Mr. BIBKO. That is correct, Senator.

Senator SARBANES. How does the answer you have just given me square with that?

Mr. BIBKO. I think it——

Senator SARBANES. You don't think that we need to specifically address the bay and its problems in order to carry through on this study?

Mr. BIBKO. I think we are addressing the bay's problems, Senator, as best as anyone possibly can at this time. And I think we have a plan in place in which——

Senator SARBANES. What is the next step of the plan?

Mr. BIBKO. The next step——

Senator SARBANES. I asked this question earlier of The Chesapeake Bay foundation people. Let me ask it of you. What do you envision happening now, specifically?

Mr. BIBKO. I envision——

Senator SARBANES. After you do your management study, hopefully well before the end of the fiscal year. Is that correct or not?

Mr. BIBKO. September 30, Senator, of this year.

Senator SARBANES. Senator Mathias said you were already overdue as of January of this year.

Mr. BIBKO. Well, we wanted to put out a quality product that would have sufficient specificity so as to result in action. We found that we needed to take another look at our water quality data and mathematical modeling in order to do it. We didn't want it to be just another piece of research that would sit on the shelves. Nor did we want to give any State an excuse for not acting in a forthright manner to implement the abatement strategies that would come out of this.

Senator SARBANES. What money is being used to do this?

Mr. BIBKO. To do what, Senator?

Senator SARBANES. What you just talked about, the management study. Is that the $900,000?

Mr. BIBKO. Yes. And an additional maybe $600,000 put up by the EPA and the States.

Senator SARBANES. What happened to the purposes for which the $900,000 was specifically given to you by the Congress?

Mr. BIBKO. We believe, Senator, that we are spending that money consistent with the mandate of Congress for monitoring, for close-out of the program.

Senator SARBANES. On what basis do you give me that response?

Mr. BIBKO. Well, sir; I believe monitoring and transition were two of the key requirements set forth by Congress for the $900,000. I think we have gone beyond that by putting our own resources into——

Senator SARBANES. Where is your answer to our letter to you of November 5? Do you have that with you?

Mr. BIBKO. No, Senator. The answer will be coming from the Administrator.[1]

Senator SARBANES. Will be coming?

Mr. BIBKO. Yes, Senator. You see, we at the time——

Senator SARBANES. What is the date of today?

Mr. BIBKO. You have to help me, Senator.

Senator SARBANES. March 1?

Mr. BIBKO. Yes, March 1?

Senator SARBANES. This was a letter of November 5——

Mr. BIBKO. That is correct.

Senator SARBANES [continuing]. Concerning the congressional intent with the expenditure of this $900,000.

Mr. BIBKO. That is correct.

Senator SARBANES. In the meantime, you have been spending it on other matters and we don't have a response to that letter; is that correct?

Mr. BIBKO. We have been spending it I believe consistent with the mandate. However——

Senator SARBANES. That is the matter that is at issue. We may have to get some legal counsel. But we don't even have a response from you. That is a letter of November 5; is that right?

Mr. BIBKO. That is correct.

Senator SARBANES. How did that happen?

Mr. BIBKO. Excuse me, Senator. Since the time that EPA received that letter, we have had many discussions with staffs of various Senators and Congressmen involved in the Chesapeake area. We, however, were unable to provide any kind of a meaningful response at that time because the budget, our budget for that $900,000 had not yet been generated.

As you are aware, Senator we rely heavily on the Chesapeake Bay Management Committee made up of bay users, et cetera, and take advice from them, consistent with Congress, before we take any final action on something as important as the budget. That was only recently finalized as of, I would say, about a month, month and a half ago, at which time a draft went to the Administrator's office, and the Administrator is now finalizing, working with Eric Eidsness, her reply.

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[1] See p. 146.

I do, however, have a copy of that budget that shows how we are spending that $900,000 plus another $600,000 that we came up with in working with the States.

Senator SARBANES. What is the reason for this asserted delay in knowing your appropriation?

Mr. BIBKO. Senator, the primary reason was we wanted to be as responsive to your question as we could, and your request asked us to——

Senator SARBANES. When did you get your appropriation from the Congress?

Mr. BIBKO. I would have to defer to my staff for that, Senator. I don't know.

Senator SARBANES. Let's see if someone has the answer.

Mr. BIBKO. Late September Mr. Teller has advised me.

Senator SARBANES. Late September?

Mr. BIBKO. Correct.

Senator SARBANES. So you had it at the beginning of the fiscal year, unlike most agencies.

Mr. BIBKO. That is apparently the case.

Senator SARBANES. Then about 6 weeks into the fiscal year we wrote to you about how you were going to carry out the express congressional intent. We still don't have a written response?

Mr. BIBKO. Well, we have held numerous discussions with staff on this as we were developing the response, Senator. What we are trying to say——

Senator SARBANES. Do you perceive that, Mr. Bibko, as the difficulty of administration in the central office, or the difficulty of administration at your regional level, that has led to this problem?

Mr. BIBKO. Well, since I just sent the letter off very recently, if there is a problem, it is in the regional office. But I submit that there is no problem because we had to be responsive to your request or there was no sense in replying to you. We could not be responsive until we had agreement with the users, the people that Congress asked us to touch base with, the Chesapeake Bay Management Committee—Mr. Baker was at these meetings—to adopt the budget. So we kept staffers involved, invited them to our meetings, did all we could to begin to answer that request as we were evolving the answers.

Senator SARBANES. This letter of November 5 which was a followup to an earlier letter of August 11,[1] which was also not answered—do you all believe in answering your letters down there?

Mr. BIBKO. Yes, Senator.

Senator SARBANES. I should hope so. It says, "The abatement, control, and compliance budget function provided $900,000 for implementation of the EPA Chesapeake Bay Program." Then it spells out the purposes for which the funds are to be used: maintenance of data base, Chesapeake Bay Liaison Office, annual water quality monitoring. I just note here it says, "This annual 'pulse-taking' of the bay's water quality is clearly called for if we are to measure future trends in the bay's health against the baseline." It doesn't take long for the baseline to become dated if we don't do that as a continuing process. Would you agree with that?

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[1] See p. 143.

Mr. **Bibko**. That is entirely consistent with our belief, yes.

Senator **Sarbanes**. And resource user participation, $75,000, which I take it is the matter you were just referring to, which is about 8 percent of this budget. Now, have these other things been done?

Mr. **Bibko**. Yes, Senator, they have. We are on track with meeting congressional requirements in each of these areas and will have fulfilled them to our best belief and knowledge by September 30, 1983.

Senator **Sarbanes**. Is it your expectation that the EPA is going to recommend a mechanism whereby the data can be maintained and where EPA will be involved with the States and other relevant parties to implement a strategy?

Mr. **Bibko**. That is correct.

Senator **Sarbanes**. That is going to be part of the management report?

Mr. **Bibko**. That is correct. It will be——

Senator **Sarbanes**. Does EPA anticipate that it will be seeking moneys from the Congress or would like to have moneys from the Congress to help carry out the implementation?

Mr. **Bibko**. I cannot make that assumption, no, sir.

Senator **Sarbanes**. I don't want you to make an assumption. I want to know what your view is on that.

Mr. **Bibko**. My view is that I am not going to be asking Congress for money for any purpose. That is not my job, Senator, in all due respect, as you are aware.

Senator **Sarbanes**. You have just laid out $27 million. You are just going to let it go by the board? Shouldn't you have a strategy to try to really bring about the best returns from our investment?

Mr. **Bibko**. Yes, Senator, and we have got it. We really think we have got it.

Senator **Sarbanes**. What is it? I don't see it here.

Mr. **Bibko**. Section 303 of the Clean Water Act. The Chesapeake Bay is by far a resource of monumental importance, but it is made of water, Senator, the same as streams and lakes all around this country that have water quality standards and in which water quality standards must be revised from time to time. Congress has provided money for water quality planning. Congress has given EPA, and headquarters has given me, the manpower needed to work closely with the States to revise water quality standards.

Senator **Sarbanes**. You are simply saying that having gotten the special study that recognized the unique potentials of the bay, both in terms of the contribution if it was cleaned up and also as a study mechanism, you are simply going to lapse back into the standard pattern now. In other words, you are going to fold the tent once the study is completed; is that right?

Mr. **Bibko**. Not at all, Senator. Just the opposite. I am saying that, in my opinion, the people of Maryland, Virginia, Pennsylvania, and everybody who shares a wonderful, great natural resource like the Chesapeake Bay has gotten a real break, a deserved break, but has gotten for the first time the wealth of data needed to really have a chance to implement programs that are going to protect that bay. I am saying now that we have the data base, now it is up to EPA people in the abatement area, through which this $900,000 was appropriated, as I understand it, to pick up the ball and run with it.

Senator SARBANES. Is EPA committed to maintaining the data base over time in the future?

Mr. BIBKO. EPA, working with the States, has worked out an arrangement whereby we will maintain the data base, that is correct, at the Annapolis lab.

Senator SARBANES. Are you going to spend some money in order to do that?

Mr. BIBKO. Yes, sir, we are.

Senator SARBANES. Are you going to maintain a unit in Annapolis that would in effect amount to a liaison office that is going to have this responsibility and the responsibility of maintaining this relationship with the State and local governments and with the various users?

Mr. BIBKO. Yes, Senator. We already have an office in Annapolis and it is——

Senator SARBANES. It is going to be maintained? Is that activity going to remain in the Annapolis office?

Mr. BIBKO. So long as there is a need for it, yes, there will be——

Senator SARBANES. Do you anticipate there being a need for it over the few years ahead of us now?

Mr. BIBKO. Senator, I would say that it will probably take a minimum of 1—maybe that is being overly optimistic—to 3 years in order to come up with abatement procedures in place needed to protect the bay. So if you are asking me whether or not I see a continued EPA presence to coordinate the State efforts in revising water quality standards out of Annapolis for that period of time, I would say that there would be a need for this coordination and it should be, to the extent possible, out of Annapolis because that is a logical place for it to continue from.

Senator SARBANES. In other words, I don't know how you get it down to 1 year, but you are saying then that EPA is committed to maintaining the data base, as we move ahead, and that it is also committed to maintaining a liaison office in Annapolis charged with specific responsibility stemming out of this study; is that correct?

Mr. BIBKO. Yes. EPA and the States will maintain that data base. We are going to give space for the computer in our laboratory. We have already worked out how the computer will be maintained. The States will be able to tie into it—that is already worked out—from their own locations.

Senator SARBANES. And you will provide staffing for it?

Mr. BIBKO. We will have a person there, plus whatever is required. Again, we have worked this out with the bay users and with everyone. We have openly stated how we plan to staff it.

Senator SARBANES. Of course, part of this is going to be covered in the management report, isn't it?

Mr. BIBKO. That is correct.

Senator SARBANES. I am trying to get some sense of—I mean, we don't want to have you back in here again. We would like the management report to come in and be able to take a look at that and say, "Well, now there is a strategy that they have laid out, including the involvement of the EPA, in a sensible fashion in order to achieve these results."

Mr. BIBKO. Well, as I said, whether it is in the management report or elsewhere, in our final report to Congress, we will and do recognize the need to assure ongoing coordination. I have gone on record today and in the past in saying that coordination will be there. There will be liaison activities out of Annapolis, if for no other reason, selfish reasons, in that my people in Philadelphia who are abatement people, used to revising water quality standards, have to be brought on board. There has to be a transfer of knowledge and information from the folks in Annapolis who have been with this program for many years to my people who aren't research specialists but are specialists at working with States cooperatively to revise water quality standards.

Senator, that is what is desperately needed now. I don't think anyone really recognizes an overwhelming need for more research. As a matter of fact, what I have consistently heard from everyone is enough research; it is about time for some action. That is the implementation phase, as we see it, sir.

To the extent additional information is needed, as reflected by the monitoring program, then in all fairness, Senator, I would maybe sit back and rethink my ideas on S. 431 and on the need for additional research. But I am sure you recognize that I don't make the decision on S. 431. The Administrator will.

Senator SARBANES. S. 431 is not simply another additional research proposal. It is a real action proposal. You just told me you are all for an action program. If I understood you earlier, you were questioning the action aspects of S. 431. Or did I misunderstand you?

Mr. BIBKO. I am sorry, Senator; I didn't get to the second part. I think I started with research.

The second part of S. 431, you asked me how I understood it to read, did, as you point out, of course, correctly, address the issue of funds to be made available to States to implement Chesapeake programs or abatement strategies.

Senator SARBANES. So I take it from what you have just said that that part of it you think is on the right track.

Mr. BIBKO. No, Senator, that is not exactly right. I didn't say that. No. 1, Senator, I don't make the decisions. The Administrator does.

Senator SARBANES. You just told me you thought we had done enough studies and we needed action.

Mr. BIBKO. That is correct.

Senator SARBANES. And we ought to implement it.

Mr. BIBKO. That is correct.

Senator SARBANES. You raised some questions about S. 431 earlier with respect to its research component, expressing your sort of skepticism about that, which is, of course, consistent with what you just said in terms of wanting action. Now I asked you about the action component of S. 431, which it would seem to me would follow from everything you said here this morning that you would be very strongly supportive of. I take it that is not the case?

Mr. Bibko. First, Senator, in answer to your question, I am not the administration spokesman on S. 431.

Senator Sarbanes. I understand. But you don't stop thinking just because you are not the spokesman. What do you think?

Mr. Bibko. OK, what do I think.

Senator Sarbanes. You have a chance to make a great contribution, Mr. Bibko, with respect to the Chesapeake Bay. We are just trying to get you to seize it here.

Mr. Bibko. And, Senator——

Senator Sarbanes. It is right there in front of you. The history books can say it was the Regional Administrator in Region III, Peter Bibko, who saw the chance to really do something about the Chesapeake Bay and in a nonbureaucratic manner he moved on it, and generations—James Michener had an addendum to his book [laughter] to recognize the Bibko contribution to the Chesapeake.

Now, we have you there. We are not hammering you hard this morning. You have a chance to grab it and move with it. Why don't we do that?

Mr. Bibko. What was the question, Senator? [Laughter.]

Senator Sarbanes. Do you want to seize this opportunity?

Mr. Bibko. We have seized it, Senator.

Senator Sarbanes. Well, now, that means wouldn't the Chafee provisions for action programs be helpful to you?

Mr. Bibko. No, Senator. I think it might be a hindrance at this time, actually, because I think we have the mechanisms in place right now to move ahead and implement water quality revisions. The States do have the wherewithal to begin this process. To comment on the Chafee proposal beyond that would be beyond my expertise and understanding of some of the broad ramifications that may be associated nationally with such a proposal limited to the Chesapeake. I think we have the mechanism, Senator, to move forward.

I as a Regional Administrator, and not as the Administrator, have to assume, as I did last year when I began to commit my resources, I have to work with what I have got. If it becomes difficult to get the job done with what I have got, then we can go and look for alternative funding mechanisms.

Based on conversations I have held with the States, I believe, sir, that we have the ability to move forward and implement controls to protect the bay. That is not to say that additional help might not be required at some time. But as I see it right now, sir, before the finalization of the management report, I believe that we have the ability to begin a process that has never been even attempted before, to meaningfully regulate a large estuary based on a very large data base that has already been accumulated.

But again, I am not a spokesman for the administration. Only the Administrator is. Eric Eidsness, or others, I feel, should comment on the Chafee bill.

Senator Sarbanes. Let me hear from Ms. Tippie, if I could, for a moment on the other question of the program that is going on under the $900,000.

I take it you are familiar with the letter of November 5.

Ms. Tippie. Yes, I am familiar with that letter.

Senator Sarbanes. Are those activities being carried out?

Ms. TIPPIE. It is my opinion that those activities, which were specifically to maintain the data base—if I am correct, it was $125,000 that was indicated necessary for maintaining the data base—to establish the Chesapeake Bay liaison office, to assure that there is continuation of the program, and the third and fourth issue respectively, to establish a monitoring program and resource user participation.

Now, our actual budget for the $900,000—and as Mr. Bibko indicated, we have a total of $900,000 committed from Congress, $313,000 has been committed by the States, and an additional $300,000, plus other in-house resources have been committed by EPA. So the total is, of course, $1,513,000.

Now, of that total budget of $1,513,000, we have allocated toward technology transfer over $400,000. The actual breakout in our budget, which I believe is available for the record, indicates that in the process of establishing the monitoring strategy, we have indicated in our budget $84,000 as a line item for monitoring. That $84,000 was to conduct a series of workshops and bring together scientists to address the very issues of how do we best monitor the bay to assure that we are efficient in our monitoring effort. But perhaps more critical to any monitoring program is to assure that the data is analyzed and that also our computer programs and modeling efforts are put onto a centralized data system.

So under our budget allocation of computer/modeling, we feel that many of those, a good percentage of those funds, over 80 percent, were specific to the purpose of establishing a data base which would be the foundation for the monitoring program.

To give you an example, when you are trying to establish a monitoring effort, you want to assure that you are sampling spatially and temporally in a manner that will help you address the questions that you are trying to address. We have in the process of developing our monitoring strategy set up several levels of effort that address specific questions. What is crucial in establishing the level of effort is that we analyze the actual data that has been collected and put into this centralized computer in such a manner so as to determine what is the most statistically significant and best mathematical way to monitor the bay. Obviously this data analysis and computer work is really all part of we feel establishment of a monitoring program.

Senator SARBANES. What are you doing specifically on determining the water quality as an annual pulse-taking? Has anything been done on that specifically?

Ms. TIPPIE. In terms of actual sampling in the bay?

Senator SARBANES. Yes.

Ms. TIPPIE. No. The funding that has been allocated in the budget has not been utilized for going out and sampling this year.

Senator SARBANES. If you don't do that, how will we have the annual pulse-taking?

Ms. TIPPIE. What we have ongoing is EPA has through its Clean Water Act mechanism of 106 and the State of Maryland and State of Virginia, which are the key States bordering the tide of the Chesapeake, have an ongoing monitoring program which they call their 106 program. The purpose of our effort is to assure that the

States are not duplicating any efforts and to assure efficiency in monitoring. Let me give you an example.

There is excessive sampling taken in the James River and much duplication of that. In the upper bay we do not have very many sampling stations. What we are trying to assure is there is appropriate coordination between the States and EPA and also other agencies and academic universities to assure that there is a coordinated annual pulse-taking of the bay.

For this year things are going as they were, but the actual monitoring strategy we are developing will assure that this duplication of effort will not continue in the future and also will assure we are more efficient in our sampling in order to really answer the questions that still remain.

Senator SARBANES. Are you now heading up this? Are you in effect the head of the liaison office, as you understand it?

Ms. TIPPIE. My understanding is I am the senior technical advisor for the bay program, and my official duty is to serve as technical director and to complete the products of the program, both our characterization report and our management report.

Senator SARBANES. Mr. Bibko, who heads up the liaison office?

Mr. BIBKO. Well, Senator, I am not sure there is a formal liaison office, other than the office that Virginia is responsible for. Virginia is our representative, Senator, down there responsible for the successful completion of the entire program.

Senator SARBANES. So would you say that she heads it up?

Mr. BIBKO. Well, she is the person responsible for it, yes, so she would be the one in charge.

Senator SARBANES. Of the liaison office?

Mr. BIBKO. Again, it is just a term liaison office.

Senator SARBANES. You are the ones using the term. I am trying to get at the responsibilities. She looks much more competent than simply trying to call her technical. I don't know what we get by putting that technical label on her. She is in charge of the office, isn't she, for this program?

Mr. BIBKO. She is in charge of the office, yes, for the technical aspects.

Senator SARBANES. Even when the technical aspects are completed, won't there be someone in charge of the office? You told me that just a little while ago, I think.

Mr. BIBKO. It depends on the nature and structure of the office, yes.

Senator SARBANES. That is not what you told me. You told me, as I understood it, there would be a need for an office and carrying on of these activities at least for, you know, some period of time.

Mr. BIBKO. Correct.

Senator SARBANES. Isn't that correct?

Mr. BIBKO. That is correct.

Senator SARBANES. Is there a second draft of the management report about to be completed?

Ms. TIPPIE. Yes, Senator. We are completing the second draft of the management report, and we anticipate it will be circulated broadly for review and comment next week.

Specifically, we have asked several people to formally review the report, including Mr. Thomas Jorling and Mr. George Alexander have been approached about reviewing this report. We have also asked the States of Maryland, Virginia, and Pennsylvania to formally review the report.

Senator SARBANES. Mr. Bibko, how familiar are you with the second draft that is coming out next week?

Mr. BIBKO. I have relied pretty heavily up to this point, Senator, on Virginia. I will be reviewing the second draft shortly. It is not yet ready for my review, so I am not overly familiar with it, other than I understand the major approach that she is taking and the kinds of factors she is considering and the alternative strategies.

Senator SARBANES. I think you have seen some of the concerns we have here. I would hope and in fact would counsel that they be addressed in the second draft report.

I don't know whether you like spending all of your time down here like this, but this is a matter of very deep concern to a number of members of the Congress, the Senate, and the House. It is my own view that EPA, I am now talking about you as the Regional Administrator, needs to have a sense that there is an opportunity here—not that this is a task, on which you can close the book and pass it on into history—but that there is a chance to work in a very imaginative and constructive way with the local, I mean with the State and local people, and with the private sector, make a major contribution to the quality of the bay, a major contribution to the lesson that teaches us with respect to other estuaries and a major contribution with respect to general strategies in approaching problems of this magnitude and complexity that can prove effective in moving us forward.

I think we are going to be watching this very closely. So I am hopeful that that attitude will be reflected in this second draft of the management report. I was not being entirely facetious or humorous in my earlier references to the challenge that is in front of you. I would dare say in future years if you look back, an addendum in the Michener book would mean more to you than a lot of other writings which you have experienced in the course of being the Administrator. I simply commend that thought to you.

Thank you very much, Mr. Bibko.

Mr. BIBKO. Thank you, Senator.

[Mr. Bibko's prepared statement, with attachments; responses to written questions; and a letter, with attachments, to Senator Mathias dated March 18, 1983, follow:]

Statement of
Mr. Peter N. Bibko
Regional Administrator
Region III
Environmental Protection Agency
before the
Subcommittee on Governmental Efficiency and
The District of Columbia
Committee on Governmental Affairs
United States Senate
Room SD-626, Dirksen Senate Office Building

March 1, 1983

Mr. Chairman and members of the Subcommittee, my name is Peter N. Bibko. I am pleased to be here today to discuss the Chesapeake Bay Program before the Senate Subcommittee on Government Efficiency and the District of Columbia. With me today are several other Agency officials who now play or have played important roles in the Program who are available to respond to detailed questions you may have. They include: Greene A. Jones, the Director of Region III's Water Management Division which currently contains the Chesapeake Bay Program as one of its major functions; Len Mangiaracina, the Deputy Director of the Water Management Division and original Director of the Program; Virginia Tippie, our Senior Technical Advisor and current Technical Director of the Bay Program, is particularly knowledgeable in current technical activities of the Program; Dr. Tudor Davies, formerly the Director of the Chesapeake Bay Program, and presently, the Director of Program Management and Operations, in the Office of Water, at EPA Headquarters; and Robert Collings, Esq., who has researched and reviewed the legal and legislative history of the Program.

Since September 1, 1981 I have been the Regional Administrator of the Philadelphia Regional Office of the Environmental Protection Agency (EPA). Since the transfer of the full management responsibility of the Chesapeake Bay Program to the Region in October 1982, I have been deeply involved in the Program and have assumed the Chairmanship of the Management Committee.

The Subcommittee's letter to me of January 26, 1983 states that today's hearing was being held to review the extent to which EPA has carried out its Congressional mandate and what the future role of EPA should be in water quality management of the Chesapeake Bay. In my testimony today, I will try to explain how the EPA has fulfilled its Congressional mandate in implementing the Bay Program. I would also like to comment on some of the concerns raised in a draft report authored by the Chesapeake Bay Foundation, later in my testimony. In this regard, we have been pleased to have Mr. Will Baker, Executive Director of the Foundation attend recent Management Committee meetings and value his group's helpful comments and suggestions.

At this time, I would like to briefly summarize the history of the Chesapeake Bay Program, the current organization, the manner in which we have implemented each major Congressional directive and, finally, I will discuss each of the important work products which will result from the Program.

Mandate and History of the Program

First, let me briefly summarize the history of the Bay

Program as it relates to each of the primary objectives mandated by Congress. The Agency's Chesapeake Bay Program was authorized during the 1976 Congressional appropriations process which directed EPA to conduct an indepth study of the Bay. The Senate Appropriations Committee Report clearly states the concern that the Bay is "a critically important natural and economic resource but is subject to many pressures which, if uncontrolled, will lead to the degradation of the whole Bay area." To satisfy this concern, the Committee on Appropriations, in its Report on the 1976 Appropriations Bill for the Department of Housing and Urban Development and Independent Agencies, directed EPA to:

I. Assess the principal factors having an impact on the Bay as perceived by scientists and users

II. Establish mechanisms for collecting, storing, analyzing and disseminating environmental data

III. Analyze available environmental data and implement methods for improved data collection

IV. Propose alternative control strategies for long term protection of the Bay.

V. Evaluate Bay management coordination mechanisms to best assure timely implementation of control strategies.

To accomplish these tasks, EPA reprogrammed funds to initiate operation of the Chesapeake Bay Program on October 1, 1976. Original plans called for a comprehensive program which would last up to five years with annual funding of approximately 5 million dollars. Separate one-year extensions were subsequently authorized which, I am pleased to report, will bring the Program to a successful conclusion in September of this year.

Since the inception of the Program in 1976, funding has approached approximately thirty million dollars. The majority of these funds has been used to support research efforts throughout the Bay. (See Appendix 1.)

Early in the Program EPA established the organizational structure needed to best accomplish its Congressional mandate.

A Technical Advisory Committee (TAC), consisting of multidisiplinary research scientists, was formed. Dr. Tudor Davies was the first Chairman of the TAC and later became the Director of the Chesapeake Bay Program. Program policy was guided by a Management Committee which was chaired by the Chesapeake Bay Program's Director. To incorporate perceptions and concerns of both Bay users and the general public, a Citizen's Advisory Committee was also formed. The direction of the Program was firmly established in 1977 at a conference of EPA personnel, State officials, Bay scientists and area citizens. From a list of high priority study areas, three significant areas were selected and approved by the attendees. The areas selected as appropriate for detailed study in order to best meet Congressional goals were toxics, submerged aquatic vegetation and nutrients. These were believed to be broad-based problem areas with significant impact on Bay area resources, and were considered most indicative of Bay stability and productivity.

Although the Program was originally the responsibility of the Region III, in January 1979 the agency transferred the lead management responsibility of the Program to the Office of Research and Development (ORD) and moved the remainder of the staff to Annapolis. Addition of contractual personnel at this time increased the combined Federal and contractor staff to approximately thirty-five people. Although ORD personnel had the primary responsibility for Program implementation, the Regional office continued to interact with the Chesapeake Bay Program office. In October of 1982, subsequent to the delivery of the initial programs products, the Region assumed the full responsibility to complete the remaining program products and to implement the transition phase of the program.

Mr. Chairman, the initial primary objective of the Chesapeake Bay Program was the determination and analysis of water quality parameters. The course of the Program was altered by a Management Committee decision to place greater emphasis on assessing the impact of water quality on the living resources of the Chesapeake Bay. The decision to produce the ecological characterization and Management Strategy reports was made by the State-Federal Management Committee over 2 years ago. In brief, the Management Committee felt the Chesapeake Bay Program should not be just another water quality study, but should be a comprehensive environmental quality study. This meant that all major water quality and resources data bases developed for the Bay since the 1940s had to be collected, assessed, and included in our analyses. All major Chesapeake Bay data bases are now on the Chesapeake Bay Program computer system and the environmental characterization analysis by CBP staff is nearing completion. This characterization analysis will be the basis for development of management strategies which are acceptable to the States. The Management Committee Member Agencies agreed to assume program responsibility for implementation of program findings and directed Chesapeake Bay Program to focus its management study emphasis upon model production runs and trade-offs between point and nonpoint source controls.

The completion of the Characterization and Management Reports in September of this year will provide a meaningful tool for regulatory agencies to use in implementing water quality improvement programs in the Bay area.

Current Organization

During fiscal year 1982, two Federal positions were originally assigned to the Program in Annapolis. Within the past few months, three additional positions were reallocated to the Program. Thus, We currently have five Federal positions located on the Bay. Three of the positions: Virginia Tippie, David Flemer and Linda Davidson, are physically located in the Annapolis Office of the Chesapeake Bay Program. John Klein is currently working on the Chesapeake Bay water quality model at the Virginia Institute of Marine Science (VIMS). The fifth position is split among a number of employees of the EPA Laboratory in Annapolis. We feel that this allows us to use employees with varying background as needed to efficiently and effectively address the specific needs of the Program (see Appendix 2). Under a cooperative agreement with the University of West Florida, we have nineteen additional personnel in Annapolis working solely on Bay issues. Due to the high priority this Program is given in the Region, we have also assigned four full-time Regional positions located in Philadelphia from other EPA water programs to assist in Bay Program activities. I would like now to turn to some of the specific activities of the Chesapeake Bay Program within the context of our Congressional mandate.

Mandate: Assess the Principal Factors having an Impact on the Bay as Perceived by Scientists and Users

Given this brief history and summary of organization, Mr. Chairman, I would now like to tell you how we have addressed each of the aforementioned directives of Congress. Our first directive was to assess the factors impacting the quality of the Bay according to scientists and users. I believe that we have met this directive by funding, conducting and synthesizing forty research projects in the important areas of nutrients, submerged aquatic vegetation and toxics. The findings of these projects as well as previous scientific studies of the Bay have been reviewed and discussed with the Bay scientific community, local governmental agencies, Bay residents through the Citizens Program for the Chesapeake Bay, Inc., and its Resource User Management Team (RUMT) composed of Bay users.

The Program's Project Reports constitute the forty research projects funded through the Chesapeake Bay Program. The reports are being completed as part of the Program and dissemination will be through the National Technical Information Service. We are also evaluating the Chairman's suggestion to provide copies of the full reports to selected research libraries on the Bay. We will report on this in the near future. The Synthesis Report summarizes, integrates, and reports the results of the separate research projects in the areas of nutrients, toxics and Bay grasses. Some of these findings include:

- *Compared with historical levels, the upper Bay, mid-Bay, and western shore tributaries are either moderately or highly enriched with nutrients,

- *Sediments in the upper and mid-Bay contain toxic material which exceed natural background levels, including copper, cadmium, zinc, and nickel, and some synthetic organic compounds,

- *Most of the annual nitrogen load enters the Bay during winter and spring, while the greatest portion of the annual phosphorus load enters during spring and summer,

- *Nonpoint sources, especially cropland, contribute most of the nitrogen to the Bay,

- *Point sources, such as sewage treatment plants and industries, are the major sources of phosphorus,

- *The largest tributaries, the Susquehanna, James, and Potomac Rivers, are important contributors of nutrients, metals, and toxic compounds,

- *The decline in submerged aquatic vegetation (SAV) results from environmental stress, primarily a lack of light due to increased turbidity in the water and epiphytic growth on SAV blades, and

- *In some areas, trends in the SAV decline parallel those of nutrient and turbidity changes.

These technical findings, coupled with the analytical tools (math models for point and non-point pollution sources) developed by the Bay Program, will form the basis for recommending alternative pollution control strategies for the Bay.

Mandate: Establish Mechanisms for Collecting, Storing, Analyzing and Disseminating Environmental Data

To fulfill the second mandate, we have collected over three million data points and inventoried all usable, existing Bay data bases. This extensive natural resource data base is now fully functional and quality-assured, and will be permanently stored in a computer system housed at EPA's Annapolis Laboratory. This computer will be given to the States and be dedicated to Chesapeake Bay activities. The mechanism for storing future information has been established through a computerized data base, which will be available to Bay users by September 1983. We have also developed a complimentary series of Chesapeake Bay water quality models (e.g. three dimensional, hydrodynamic, watershed, and tidal) to assist in analyzing future Bay strategy and planning decisions. To ensure that the mechanism is in place for continuing data dissemination and use of the model, we are scheduling technology transfer training sessions prior to Program completion for personnel of the States of Maryland, Virginia, and Pennsylvania and EPA. Training for other Bay users will also be provided so that the model and data base are available to all with the desire and capability to use them.

Mandate: Analyze Available Environmental Data and Implement Methods for Improved Data Collection

Our third mandate also deals with data collection activities and many of the accomplishments detailed under the second mandate also apply here. In addition to those activities, we are now conducting an inventory of all agencies that currently monitor the Chesapeake Bay. The data from these Agencies, combined with our own data collection activities, allows us to analyze gaps in our current inventory and to recommend appropriate monitoring programs to both fill these gaps and effectively track the progress of future Bay pollution control activities. A monitoring team has been established and is comprised of representatives of State and Federal Agencies and the Bay scientific community. This team is developing a strategy focused on ecosystem concepts, and will be outlining levels of monitoring efforts and their associated costs. The Management Report will provide recommendations for improved monitoring programs which will detail scope, purpose and frequency of Bay-wide data collection system.

Mandate: Propose Alternative Control Strategies for Long Term Protection of the Bay

This mandate was addressed and met through the development of extensive and innovative water quality models and the association of water quality parameters with living resources as outlined in the Characterization Report.

The Characterization Report, which will be available this Summer, assesses the current condition and historical trends of the Chesapeake Bay with respect to water quality and living resources and examines possible relationships between them. Another significant benefit from the Characterization Report is the creation of a data management system which includes all historical data bases used in our analyses, as well as new data collected. Some preliminary findings of the Characterization Report are:

*Levels of nutrients (primarily nitrogen and phosphorus) are increasing in many areas of the Bay, leading to reduced water quality. This enrichment is most severe in the northern Bay and upper reaches of tributaries. Only the

Potomac, Nanticoke, and Choptank Rivers currently exhibit improving water quality with regard to nutrients, The amount of Bay water showing low (or no) dissolved oxygen in summer is estimated to have increased 15-fold in the last 30 years. Currently, much of the water deeper than 40 feet is in this category from early May through September in an area reaching from the Bay Bridge to the Rappahannock River,

*Heavy metals and toxic organic compounds which exceed natural background levels are found in Bay water and sediments. Highest concentrations occur near urban or industrialized areas, and in the upper Bay. Some of these toxicants are being bio-concentrated by plankton, shellfish, and finfish,

*Oyster spat set harvest have declined significantly in the past ten years, particularly in the upper Bay, western tributaries, and some eastern shore areas such as the Chester River, Landings of freshwater-spawning fish, such as shad, alewife and striped bass, have decreased in recent years. Spawning success of these and other similar species has also been fair to poor in most areas sampled. Harvests of marine-spawning fish, such as menhaden, have generally remained stable or increased,

*The recent loss of submerged aquatic vegetation (SAV) is linked to increasing nutrient enrichment: enhanced phytoplankton growth and epiphytic fouling of plants has reduced the light reaching SAV to below critical levels, Toxicants, such as herbicides, are only a problem in local areas close to sources, *Reduced diversity and abundance of benthic organisms can be related to contamination of sediments in heavily impacted areas. Low dissolved oxygen in summer is considered to be the major factor limiting benthic populations, including shellfish, in the upper and mid-Bay. This can be expected to also reduce available habitat for finfish,

*Declining water quality -- nutrient enrichment and increased levels of toxicants -- is occurring in major spawning and nursery areas for freshwater-spawning fish, as well as in areas experiencing reduced oyster harvest, and

*Preliminary ranking of the status of Bay regions based on water and sediment quality and living resource trends indicates that the upper Bay (above the Bay bridge), upper Potomac, upper and middle Patuxent, upper Choptank and Nanticoke Rivers are currently poor; Eastern Bay, lower Choptank River, Tangier Sound, and the lower main Bay (south of the Rappahannock) are good; the rest is fair.

The models developed by the Chesapeake Bay Program have the capability of providing management agencies with tools which identify the impacts of varying water quality parameters. This mechanism, coupled with the extensive data collected by the program, will provide management agencies initial control strategies and the ability to develop additional alternative control strategies to assess their impact on the water body and the community. For example, the models developed have the ability to predict for varying point and nonpoint source control strategies the different levels of nutrients which would be introduced into the Bay. This would provide the Bay managers with the basic information necessary to develop and assess control mechanism options.

Mandate: Define and Improve Bay Management Coordination Mechanisms

In recognition of the existence of a diversity of concerns on the Chesapeake Bay, EPA established a Management Committee which includes senior water quality and resource officials from EPA, the States of Maryland, Virginia and Pennsylvania, as well as a representative of the Citizen Program for the Chesapeake Bay, Inc. These individuals have and will continue to participate in all Program aspects including planning, technical analysis, data compilation and processing, report writing, and review and implementation of Program findings. These officials also serve as liaisons between the Program and other Federal and State programs. The final product of the Chesapeake Bay Program, the Management Report, will recommend the appropriate post-Program management institution.

The Management Report which will be completed this fall, will also summarize the findings of the entire Program in light of alternative pollution control strategies to attain desired environmental goals or uses. It will also examine the feasibility and costs of point versus nonpoint pollution control and will suggest needed institutional and policy changes where appropriate. A direct result of the Management Report will be an action plan which will identify more specifically the actions that EPA and the States intend to take based on the strategies selected from the alternatives contained in the Management Report.

In addition, we will be sponsoring a series of workshops throughout this Spring and Summer to discuss the findings of the Program and lead us to the Governor's Conference planned for the Fall of 1983. The workshops will also provide a forum for decision makers from various governmental levels and other Bay users. Because the Management Report is not yet complete, it is premature to speculate at this time what kind of liaison/management entity will be in place when the Program is completed. I can tell you, Mr. Chairman, without reservation, that EPA is fully committed to ensuring that the results of the Program are used effectively in the implementation phase through our established water quality management programs. To insure effective future program implementation we will consider processes such as environmental mediation, special consultants and any other means which might be appropriate.

Summary and Conclusions

To summarize, we are currently on schedule toward a highly successful completion of EPA's Chesapeake Bay Program by September 30, 1983. The transition process to the States has been specified and is being implemented. Existing Bay research and management activities involve a broad spectrum of interests and jurisdictions from Federal, State and local governmental agencies to research institutions, commercial interests and the public.

As I have previously outlined, one of the main objectives of the Management Report is to discuss future Bay management mechanisms. In this context the Management Report will (1) review alternative management schemes for the Bay, and

(2) recommend, where appropriate, new institutional and procedural arrangements so that the Federal investment leads to an effective, ongoing structure for environmental improvement throughout the Bay. We believe this cumulative study is consistent with the Congressional intent that the Chesapeake Bay Program have a limited life and that it smoothly transfers information and strategies which both preserve the Chesapeake Bay's environmental and economic vitality and serve as a model for other troubled estuaries throughout our Nation.

The lessons we have learned from the Chesapeake Bay Program will directly assist other water bodies in a number of ways. These include:

*Methodologies for identifying links between water quality criteria and natural resources,

*Use of a cost-effective toxicological protocol for assessing the impacts of point-source effluent discharges,

*Modelling tools for studying critical nonpoint-source pollutants in estuaries, and

*Monitoring strategies which will lead to more appropriate data collection, analysis, and use.

Concurrently, we are laying the foundation to incorporate the results of findings into the normal course of EPA programs. The reports developed through the Chesapeake Bay Program present an outstanding framework for future action. The data base creation and, more importantly, the capability for its use by scientists and planners alike is an outstanding achievement not only for the Bay community but for scientists, managers, and interested citizens who are concerned about relationships between estuarine system use and water quality and resources.

These findings and products of the Program will be of great use to regulatory agencies in implementing existing programs which preserve the quality of the Chesapeake Bay. We expect that the Bay Program's findings will supplement and improve regulatory activities such as the limitations included in effluent discharge permits, review of dredging locations and methods under the 404 program, priority issuance of construction grants, and water quality standards review and approval. The results of the Program will also significantly benefit the identification of future research needs on the Bay.

In today's testimony from the Chesapeake Bay Foundation many suggestions were made regarding the management options and funding needed for the future. Concerns were also raised about the transition period between now and the September 30, 1983. Although giving a final answer to these questions would prejudge the upcoming management report, I would like to take this opportunity to give you my thoughts on how we should proceed. The management report which will be completed September 30, 1983 will analyze possible institutional mechanisms for managing future efforts on the Bay. Potential structures range from the creation of a new interstate compact to the continuation of present structure. It is clear at this time that the interstate nature of the problem and the complex interrelations that exist the mechanism adopted will have to closely coordinate activities on the Bay. EPA is committed to working with state and local governments to insure that sound management practices are implemented on the Bay. The Clean Water Act requires that EPA exercise an overview responsibility of water quality standards, permits and construction grants where interstate waters are involved.

Thus, I, and the Regional EPA water quality staff, will be available for the States of Maryland, Virginia, and Pennsylvania, to meet and consult with; so to aid these States in their endeavors to implement the findings of the Chesapeake Bay Program research.

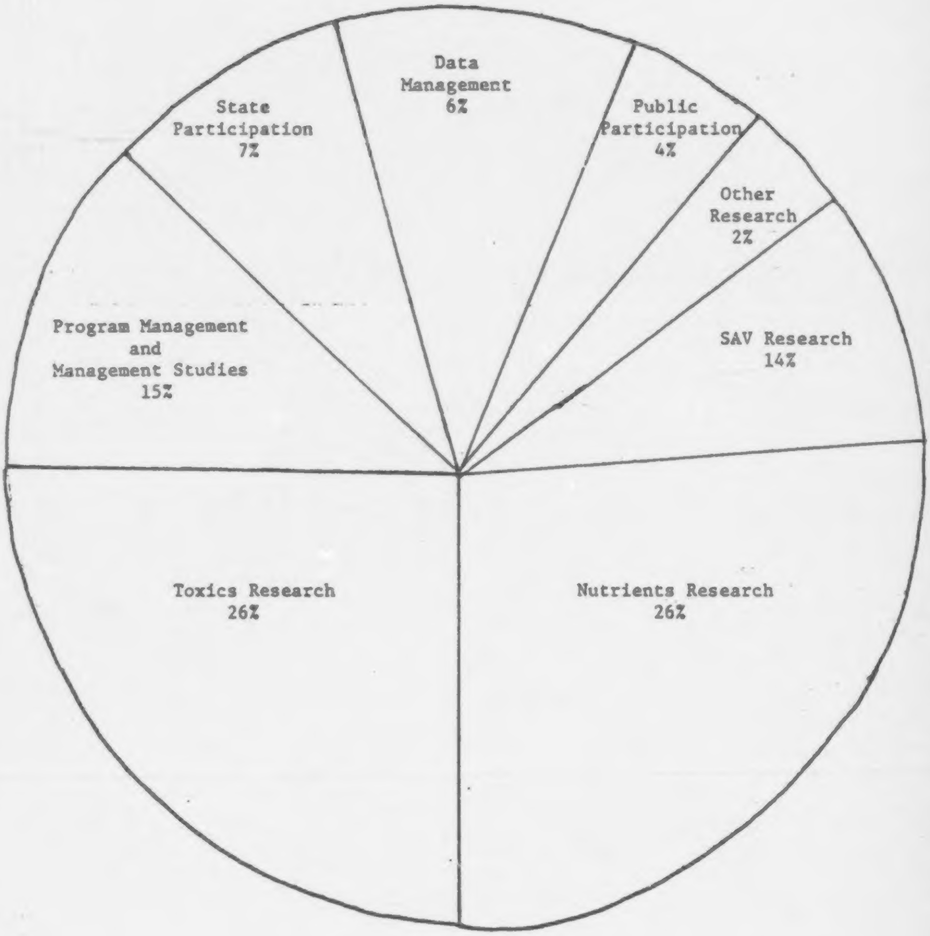
Mr. Chairman, I believe that the broad array of EPA's activities which I have outlined demonstrates that EPA is effectively responding to the mandate of Congress with respect to the Chesapeake Bay. Let me reaffirm the Environmental Protection Agency's full commitment to (1) a successful completion of the Chesapeake Bay Program and subsequent implementation in cooperation with the States and the Bay community, and (2) disseminating the scientific and management findings of the Program to the Nation-wide application, as Congress directed.

At this time my colleagues and I would be pleased to respond to any questions of interest to the Subcommittee.

APPENDIX 1

CHESAPEAKE BAY PROGRAM SPENDING TO DATE

Research 68%
Non-Research 32%



APPENDIX 2

CHESAPEAKE BAY PROGRAM STAFFING

FEDERAL PERSONNEL

Annapolis Location

Virginia K. Tippie (Technical Director)
Senior Science Advisor; Ecologist
Temporary full-time

David A. Flemer
Senior Science Advisor;Biologist
Permanent full-time

C. John Klein
Environmental Scientist; Engineer
Permanent full-time

Linda Davidson
Environmental Scientist;Biologist
Temporary full-time

The remaining staff year dedicated to Chesapeake Bay Program activities is physically performed out of EPA's Central Regional Laboratory in Annapolis. Although the personnel involved do not work in the Bay Program full time, they are responsible for specific activities involving various aspects of the Bay Program. These personnel and their Chesapeake Bay Program activities are listed below.

Orterio Villa, Jr.
Director, Central Reg. Laboratory
Monitoring Program

Howard Wilson
Environmental Engineer
Monitoring Program

Leo Clark
Sanitary Engineer
Peer Review-Water Quality Model

Ramona E. Trovato
Environmental Prot. Spec.; Chemist
Quality Assurance on Research and Technical Reports

Ruth Ann Donovan
Clerk
Administrative Assistant

Philadelphia Location

Joseph T. Piotrowski
Chief, Regional Bay Unit, Env. Engineer
Permanent full-time

Rochelle Suflas
Env. Prot. Spec.; Program Analyst
Permanent part time

Evelyn Schulz
Environmental
Scientist; Geologist
Permanent full-time

Rosemarie Baldino
Administrative
Assistant
Permanent full-time

In addition the staff listed above who work full time on Chesapeake Ba activities, the following Philadelphia Office personnel spend a significan percentage of their time on the Chesapeake Bay Program:

Peter N. Bibko, Regional Administrator
Greene A. Jones, Director, Water Management Division
Leonard Mangiaracina, Deputy Director, Water Management Division
Robert L. Collings, Attorney
Lawrence A. Teller, Congressional Liason
Robert A. Koroncai, Environmental Protection Specialist
Maureen P. Frisco, Secretary

UNIVERSITY OF WEST FLORIDA PERSONNEL (Grant Ends 9/30/83)

William C. Allen
Research Associate; Graphics Operator
Permanent full time

Debra E. Barker
Research Associate; Editor; Asst. Adm.
Permanent full time

Dewey A. Blaylock
Assistant in Statistics; Statistician
Permanent full time

Edward H. Burger
Research Associate; Data Technician
Permanent full time

Dan Haberman
Research Associate; Data Technician
Permanent full time

Laurie Harmon
Research Associate; Wang Operator
Permanent part time

Stephen Katsanos
Assistant in Journalism; Editor
Permanent full time

L. David Liverly
Research Scholar; Systems Manager
Permanent full time

Elizabeth G. Macalaster
Assistant in Journalism; Editor
Permanent full time

Gail Mackiernan
Research Associate; Biologist
Permanent full time

Joseph Macknis
Research Associate; Envir. Plann
Permanent full time

Marion Manganello
Research Associate; Office Manag
Permanent full time

Paul Mowery
Research Scholar; Statistician
Permanent full time

Willa Nehlsen
Research Scientist; Biologist
Permanent full time

Jerry L. Oglesby
Manager; Senior Statistician
Permanent full time

Diane Pawlowicz
Research Associate; Secretary
Permanent full time

Dorothy Szepesi
Research Associate; Wang Operator
Permanent full time

Harry W. Wells, Jr.
Research Scholar; Manager
Permanent full time

Jackie Wheeler
Research Associate; Data Entry
Permanent full time

PART-TIME CONSULTANTS HIRED BY UNIVERSITY OF WEST FLORIDA

Dr. Elizabeth Southerland, Engineer

Dr. Robert Biggs, Geological Engineer

Dr. Kent Price, Fisheries Biologist

Dr. Jay Taft, Environmental Biologist

NOTE: Under the overall technical direction of Ms. Tippie, staff and consultants of the University of West Florida are supervised by Jerry Oglesby.

Responses to Questions
by Mr. Peter N. Bibko to
Subcommittee on Governmental Efficiency and D.C.

1. Do you concur with the Chesapeake Bay Foundation's characterization that over half the nutrients entering the Bay come from nonpoint sources?

   a. What types of nonpoint sources has the Program identified as the biggest contributors of nutrients?

During average rainfall conditions, nonpoint sources account for 67 percent of the nitrogen and 39 percent of the phosphorus loads delivered to the Chesapeake Bay tidal system.

   b. Based on your expertise in environmental protection, what are the types of land use strategies we should be thinking about to control those nonpoint nutrients?

Nutrient loads from cropland and other land uses can be reduced by controlling soil erosion and runoff through implementation of best management practices (BMPs). Since the amount of runoff from agricultural land is related to such factors as tillage practices, slope of the land, soil type, fertilizer application rates and methods, livestock waste management, and pasture and feedlot management, there is no single BMP to control all nonpoint sources of pollution. For example, the low tillage BMP which minimizes the disturbance of top soil and decreases its susceptibility to being washed off during a storm is more effective on sloped land than flat land. However, this BMP is not suitable for wet or clay soils and may slow seed growth and seed germination in northern areas. Perhaps, the best strategy for controlling nonpoint source pollution is to apply appropriate BMPs in targeted areas where soil erosion is most severe or critical to Bay water quality.

2. How significant a contributor of nonpoint source pollution is agricultural runoff?

Runoff from agricultural cropland is the largest single source of nonpoint nutrients, contributing 90 percent of the nitrogen loads and 69 percent of the phosphorus loads due to non-point sources.

   a. Where are the main regions of the Bay generating agricultural runoff?

Farming is most prevalent in the Susquehanna and the upper reaches of the Potomac, Rappahannock, York, and James River systems. The single largest source of agricultural runoff is the intensively cultivated cropland in the lower Susquehanna drainage area.

b. Are the Amish and Mennonite farming communities of Pennsylvania significant contributors of agricultural runoff to the Bay?

It is not possible, at this time, to determine the nutrient contribution to agricultural runoff generated by the Amish and Mennonite communities. However, they are not considered to account for a disproportionate percentage of the load.

c. What best management practices is the Bay program recommending to control agricultural runoff?

CBP examined five technical levels of best management practices, ranging from application of sound soil and nutrient conservation practices to more complex animal waste management systems. The costs and load reductions associated with low-till farming were evaluated as part of Bay-wide and basin-wide management strategies. The CBP is recommending that areas from which significant nonpoint source nutrient loadings are generated be targeted to receive technical assistance.

3. How significant a contributor to nonpoint source pollution in the Bay is urban runoff?

a. What types of runoff have been identified by the program as most significant?

According to LANSAT analysis, only 3 percent of the land in the 64,000 square mile Chesapeake drainage area is in urban use. The largest metropolitan areas, however, are all located in or adjacent to the coastal plain and have a great potential for influencing local Bay water quality. Nonetheless, because of the relatively small amount of land encompassed by urban lands, nutrient loads from them were included with those from pasture land, forest lands, institutional lands, wetlands, and idle lands under "other" land uses. "Other" land use category accounts for 12 percent of the phosphorus and 7 percent of the nitrogen loads delivered to the tidal Bay system by point and nonpoint sources. This sets a maximum limit on the nutrient contribution from urban runoff. Runoff from agricultural cropland has been identified as the major nonpoint source of pollution (see question 2).

b. Which best management practices is the Bay Program recommending to control this urban runoff?

The CBP has not recommended any specific practices to control urban runoff. However, the CBP has identified different levels of urban runoff control, described their effectiveness, and estimated their implementation costs.

4. Do you believe one result of the Bay Program might be interstate agreement on common water quality standards for the Bay? Is this something you are personally pushing for in the Management Committee?

It is EPA's responsibility under the Clean Water Act to provide guidance, review, and if necessary, revise water quality standards in interstate waters.

I strongly believe that the most significant result of the Bay Program is the development of an extensive data base which can be used as input to develop water quality standard revisions and for related management purposes. The Program has also identified methodologies for identifying relationships between water quality criteria and the impact on living resources. However, discussions on the desirability of inter-state standards must be pursued in the context of the State water quality management agencies implementing the Program's findings.

I have personally initiated discussions in the Management Committee meetings and with Region III staff on water quality standards revisions in the Chesapeake Bay and expect to do so in the future. These discussions will become more specific as the reports become available.

5. Would you comment on the Patuxent River Basin water quality management plan described in the Bay Foundation's Report? Why did the Agency choose to ignore the recommendations of the charette that nitrogen as well as phosphorus be controlled to clean up the river? What nutrients and levels of them does the current Patuxent River water quality management plan control?

The Maryland government has taken tremendous initiative in acting to resolve the longstanding nutrient controversy in the Patuxent River through a cooperative scientific and public participation review process. Maryland's decision to control nitrogen inputs to the River was based on several factors which bear mentioning here: Additional research and monitoring continues to be conducted to further analyze and understand the relationship of nutrients in the estuarine portion of the Patuxent River; the model that was used for the River becomes less accurate in a direct relationship to the downstream length of the River; the State of Maryland continues to be concerned with the dissolved oxygen levels in the lower estuary which may be seasonally attributable to nitrogen inputs; and finally, continued scientific research data will improve our understanding of nutrient dynamics in an estuarine body of water.

In order to receive construction grant funding under the Clean Water Act, the Advanced Waste Treatment Review Policy requires that any proposed treatment works must be shown to definitely result in significant water quality and public health improvements. Such projects must be scientifically supported by an adequate data base and technical studies which demonstrate the relationships between waste load and water quality or public health. In the case of the Patuxent River, it is EPA's opinion that the information and studies performed to date do not provide an adequate technical basis to support nitrogen control in addition to phosphorus control. As a result, if a funding decision were to be made today, Federal construction grant funds could only be provided to fund the cost-effective solution for achieving the technically justified nutrient effluent requirements (i.e., phosphorus removal to 1.0 mg/l for the five-year permit).

One exception to this funding limitation is provided under current policy; additional Federal participation is possible if land treatment is utilized and the costs are not excessive. It should, however, be noted that this "land treatment exemption" may be deleted in the revised Advanced Waste Treatment Policy expected to be published in the Federal Register in early June.

The current State of Maryland Nutrient Control Strategy for the Patuxent River Basin, which was published January 14, 1982 and incorporated into the Water Quality Management Plan, requires removal to 1.0 milligrams per liter for phosphorus and 3.0 milligrams per liter for nitrogen.

6. Do you believe the Agency ought to be "taking the pulse" of the Bay in an on-going annual water quality sampling program?

EPA certainly has a role to play in coordinating monitoring activities in the Bay. However, I must point out that the primary responsibility for conducting routine, periodic sampling lies with the States. It is the States' monitoring program and activities which ultimately will result in revisions to water quality standards. EPA has conducted an extensive sampling program on the Bay in recent years to support the research of the Bay Program. EPA and other Federal agencies will continue to sample for specific regulatory purposes, but EPA should not assume the lead responsibility for "pulse-taking" sampling required for long-term study of trends. EPA will, of course, cooperate with the States in their sampling work as this yields appropriate water quality standards revisions and related water quality management.

The monitoring program being developed by the Bay Program will maximize the value of the States' sampling programs. This is one of the most important products of the Bay Program.

a. Describe the biology and chemistry of the Bay you have decided to measure on an annual basis?

Let me point out that EPA is not in a position to conduct routine, annual samplings of all of the following parameters. Rather, ongoing State programs will continue to provide the data needed to support water quality standards revisions.

In general, the biological and chemical variables that should be considered by the States were selected on the basis of how they affect the important living resources in the Bay. This will be outlined in the Management Study. At present, this approach is under technical evaluation. However, we feel as a minimum that the following variables should be included:

Biological

- oyster spat
- oyster condition index
- juvenile finfish index
- juvenile bluecrab index, Virginia only
- commercial fishery statistics
    - landings by species and county of landings (feasibility of catch per unit effort is being considered)
- sport fish catch
    - Species, pounds (feasibility of catch per effort is being considered); current thinking is survey should be done every three years.
- benthic invertebrates (non-commercial species)
    - Selected monitoring every two years including species number of forms larger than 1 millimeter at selected stations.
- submerged aquatic vegetation
    - Every two years following CBP protocol with feasibility of satellite surveillance as a supplement.
- water fowl
    - Follow U.S. Fish & Wildlife Service plan
- phytoplankton and zooplankton
    - No firm decision reached yet. Approach to sampling these groups will be described in the final monitoring chapter of Management Study. Chlorophyll a will be measured as an index of phytoplankton biomass.
- fecal coliforms

Chemical
- nutrients (nitrogen, phosphorus, and silica)
- dissolved oxygen
- total organic carbon
- trace metals (copper, cadmium, chromium, zinc, tin, nickel, lead, mercury, arsenic, cobalt, iron, and maganese) primarily in the sediments.
- selected toxic organic compounts utilizing a "fingerprinting" approach and selected pesticides, e.g., atrazine and linuron

Physical

- suspended sediments
- light attenuation in the water column
- salinity
- temperature
- freshwater flow

b. When will the sampling begin?

The sampling program for many of the variables was begun years ago and is part of on-going programs. Based on discussions with the States, modifications to existing sampling programs and addition or substantial increase of new variables will be initiated by the States during the spring of 1984 with further adjustment during 1985 as the budget process allows among the States. One of the greatest needs of these on-going programs is coordination of efforts.

c. How many points on the Bay?

The sampling strategy is complex since it may be scientifically more appropriate to have a stratified sampling effort for the Bay. This means that seasonal and geographic considerations should be addressed in the frequency and concordance of sampling variables. We anticipate that water quality sampling will require a minimum core set of stations, probably on the order of thirty. Sampling designs to measure the effectiveness of a given management control will require a specific analytical and statistical design. In any event, it will be the responsibility of the States to implement sampling programs in support of revised standards and designated uses.

d. Why is this annual water quality sampling not included in your FY-84 budget request?

For the primary reason, as stated above, that ongoing sampling will continue to be primarily a State responsibility, which is assisted with Federal grant assistance and augmented by specific sampling efforts conducted by EPA and other Federal agencies. As part of our responsibility to review proposed revisions to water quality standards, regional resources will be assigned to this activity.

e. How many EPA-funded water quality monitoring stations are on the Bay?

There are 32 core stations in the Maryland portion of the Bay and its tributaries. Three of these stations are in the main stem of the Bay. The State of Virginia has 9 core stations in the tributaries and none in the main stem of the Bay.

f. Is this sufficient for an annual sampling survey?

We are currently analyzing this issue in the Management Report. The monitoring strategy being developed will define station number and sampling requirements.

g. How might they be augmented?

The States have a number of sampling stations which could provide supplemental information for characterizing Bay waters. An overall Bay-wide monitoring strategy which will identify which existing stations should be kept, which should be eliminated, and which should be expanded, will be identified in the Management Report to be published in September, 1983. We also hope that voluntary efforts by Bay scientists will augment efforts of government agencies; this concept is also being developed for the monitoring program.

7. What is the most significant accomplishment of the Program to date?

There are two key accomplishments, each of which are adding significantly to the value of the Chesapeake Bay Program to the long-term enhancement of the Bay. First, the development for the first time of a comprehensive, centralized data management system allows us to define specific control strategies to meet water quality standards and assure protection of Bay resources. Second, the bringing together of the States and Bay community in a cooperative spirit for the achievement of a common goal. It is most difficult to say which is more significant because both achievements are absolutely necessary ingredients to protect the Bay.

8. What is its most serious failure?

There have not been any failures in the sense that the Program has not failed to undertake activities which will prevent successful implementation. In retrospect, the absence of focussed attention on water quality modeling and monitoring during the early years of the Program contributed to the delay in completing the Program. EPA would have certainly preferred to complete the Program earlier.

9. Do you believe that acid precipitation, altered flow, and residual chlorine are all areas requiring further investigation?

Because the Bay is a complex ecosystem, there are many natural and anthropogenic influences on water quality and living resources, including at least these three. However, it is clear that there are many other factors which have a much greater impact on Bay uses. In the context of the Chesapeake Bay Program, we continue to believe strongly that we should concentrate our resources and management attention, at this time, on assisting the States in their implementation of the research findings now available, in keeping with EPA's ongoing water quality management activities under the Clean Water Act. I would add that there is a major ongoing Federal research program on acid precipitation.

a. Would you identify other problem areas related to the Bay requiring future research?

The draft monitoring plan identifies several areas where directed research can be more effectively interfaced with Bay-wide monitoring to provide more precise answers to specific problem oriented questions The Bay-wide monitoring strategy, which will be part of the Management Report, will improve our understanding of cause-and-effect relationships upon which control strategies will be based. More site-specific analysis by the States to determine how they wish to meet the Program's recommendations are a most important future research activity to be carried out beginning in October 1983.

b. From where should financial support for such research come?

This should involve a coordinated effort among appropriate Federal Agencies, State resource agencies, the private sector and academic community.

c. Do you believe the seven remaining areas originally proposed for investigation by the program should be priority areas of research by the agency?

Generally, the answer is no. The remaining seven problem areas have elements that involve other agencies, e.g., freshwater flow modification, shoreline erosion, and dredged material disposal. Rather than begin additional research, it is far more productive at this time to begin implementing the control strategies which we already know are needed to protect the Bay.

10. Are you satisfied with the pace of completion of the final two work products: Characterization and the Management Report? Do you believe these reports will be as useful and able to be implemented if they are completed September 30 of this year, the end of the Fiscal Year? Can you suggest an earlier date for those final products to be "out on the streets" in the Bay community? Do you believe the Agency is capable of completing those work products sooner than September 30?

No. I must say that I honestly believed that the Program would be completed and that all work products were to be finalized by September, 1982. Obviously, this was not the case. However, I am now confident that both the Characterization Report, which will be published in August, and the Management Report, which will be published in final form in September, will fulfill the mandates of Congress and lead to successful implementation of the findings of the Chesapeake Bay Program. I don't believe that the schedules for the final products can be accelerated any further without reducing their quality. The integrity of the implementation of the Bay Program findings requires thorough preparation and review by both EPA and the States involved, as well as the Bay community.

Draft versions of both the Management and Characterization Reports have already been reviewed by the Management Committee and the Chesapeake Bay Foundation and are now being discussed with interested citizen and Bay users through the Citizens Program for the Chesapeake Bay, Inc. Revised versions of both reports will be circulated to these groups by early June. These early discussions and workshops this Spring and Summer will provide important comments on the final Program products and allow for a more successful implementation upon completion. We, therefore, expect that when the final Management Report is published, all of the expressed concerns of the Bay Community will have been considered and, where appropriate, incorporated into the Report.

11. What is the genesis of the Bay Program's Management Committee?

The Management Committee concept was conceived by the EPA during the first year of the program in order to satisfy the Congressional mandate to incorporate the thoughts and ideas of the States and the public in the design and management of the Bay Program. The Committee meets monthly.

a. Would you comment on the composition and activities of the Management Committee?

The Bay research and management activities involve a broad spectrum of interests and jurisdictions from Federal, State and local government agencies to research institutions, commercial interests, and the public. In recognition of this diversity of concerns, the Management Committee is composed of senior water quality and resource officials from EPA and the States of Maryland, Virginia, and Pennsylvania and representatives from the Citizens Program for the Chesapeake Bay, Inc. The meetings are open to the public and frequent observers include the Chesapeake Bay Foundation and the Chesapeake Bay Research Consortium. Management Committee members participate in all Program aspects including planning, technical analysis, data compilation and processing, report writing and review, and implementation of program findings. Members also serve as liaisons between the Chesapeake Bay Program and other relevant agencies.

b. Has it been successful?

The committee has been very successful for several reasons. First, the structure of the Committee encourages open dialogue among the States and other participants. This facilitates examination of the Bay as a single ecosystem which does not stop at political boundaries. Secondly, in the vast majority of cases, EPA has followed the recommendations of the Committee, creating a positive atmosphere and a good working relationship. Thirdly, since the Committee is composed of high level resource managers designated by the Governors, it is able to synthesize the views and needs of the States with those of EPA and the Bay community. Fourth, the Committee has provided a mechanism to enable the States to fully understand the future activities necessary to protect Bay resources.

c. How might it be improved?

The Committee or its successor could possibly be improved in several ways after the completion of the program on September 30, 1983.

Representation from the Commonwealth of Virginia could include fisheries and water quality experts to more closely parallel the current Maryland representation. The Commonwealth of Pennsylvania could have active participation by the Susquehanna River Basin Commission, and the business and industrial interests on the Bay could have representation apart from the current representation from the citizens groups. Now that we are moving further into the implementation phase of the Program, it may be beneficial to personally involve the States' Department Secretaries so that the States fully understand the resource and economic implications of the Program's alternative control strategy recommendations.

d. Should it be expanded?

It may or may not be desirable to expand the Committee or to even maintain the Committee at all. This question can not be answered until the Management Report is fully reviewed and a "Management Entity" is recommended.

If there is a continuing need for a management structure, it may be appropriate to request that representatives of NOAA and other program agencies become members of the Committee.

e. Who chairs the Committee?

As the Regional Administrator, I chair the Committee. Greene Jones, my Water Management Division Director, serves as my Alternate and chairs the Committee in my absence. I assumed the Chairmanship to personally assure that the Region is more involved in the completion of the products of the Chesapeake Bay Program and the transition of the program to the States, as well as normal water quality management programs of the Agency.

f. Should representation be formalized?

At this time, I see no advantage in formalizing the Management Committee. As stated earlier, one of the successful aspects of the Management Committee has been a structure which encourages problem solving by concensus and interactive discussion. This could be jeopardized by a more formalized structure.

12. What are your thoughts on directions the agency/States should take in terms of maintaining the Bay Program data base, water quality monitoring, and clean water implementation strategies beyond September 30? How should costs be borne?

EPA and the States are committed to establishing a management mechanism that will assure that the data base is maintained, water quality monitoring efforts are coordinated, and management strategies are implemented. Through the CBP Management Committee, a range of institutional alternatives is being evaluated, from utilizing existing structures, to establishing a new management mechanism. We strongly endorse the concept of federal/regional/state coordination, and believe that any associated costs should be shared by the affected States, and federal government, where appropriate.

13. What role do you see for private industries, watermen and shippers, in the future protection of water quality of the Bay?

The private sector including the entire range of Bay users from watermen to industrial and shipping interests should play an increasing role in the protection of the Bay's water quality. Specifically, the concept of user monitoring has been used very successfully in other areas. A "Bay Watermen's" program could be developed where people who are on the Bay daily can significantly supplement monitoring efforts. The characterization report will contain anecdotal evidence that was obtained from Eastern Shore crabbers and oystermen. This information has been used to corroborate scientific data and offer new insights on organism stress.

Industrial users can help by actively participating on the Management Committee, Resource Users Management Team, and in volunteering alternatives to suggested control strategies.

14. What future role do you see for the research, scientific and university communities?

The Chesapeake Bay Program has made tremendous advances in the coordination of efforts among the States, Federal agencies, and university communities involved in Bay research and management. This type of cooperation should continue in the future. The Chesapeake Bay Research Coordination Act established a Chesapeake Bay Research Board in NOAA, comprised of State and Federal members. We believe that the Board has the potential to improve research coordination at all levels.

15. Should States other than Maryland, Virginia, Pennsylvania and the District of Columbia within the Bay Drainage Basin be included in any Bay Management entity? If so, how and when?

All the States in the Bay Drainage area should participate to some extent in any Bay Management entity. However, it is essential that the States that border the tidal bay and/or significantly contribute to the Bay be full participatory members of any Bay Management entity. The other States that have minor land areas in the Bay's watershed should be involved when appropriate. For example, discussions of control programs in the Upper Potomac watershed should include West Virginia.

16. From the work products you have seen, do you believe the program has identified clearly the causes of decline in rockfish and oysters? If so, what are the causes and in what EPA publication are they identified?

The Program has identified a number of environmental problems which we feel are contributing to the decline of oysters, rockfish and similar freshwater spawning fish, and other living resources. It is recognized by this Program that in all probability no single factor is operating, but that these species are responding to a variety of natural as well as anthropogenic stresses. The water quality problems identified by the Bay program, and their potential impacts, are:

1. Nutrient enrichment of upper and mid-Bay, and tidal fresh and low salinity reaches of most major tributaries. This had led to changes in phytoplankton in at least two areas (Potomac and upper Bay) and could be hypothesized as affectong plankton-based food chains which support young fish and oysters.

2. Progressive loss of submerged aquatic vegetation (SAV) over the past fifteen years has been linked to nutrient enrichment by CBP supported research. SAV, which is used as habitat by important forage (food) organisms for striped bass and other predators, is virtually gone in most finfish nursery areas.

3. The amount of Chesapeake Bay water which has little or no dissolved oxygen during late spring and summer has increased about 15 fold in the last 30 years. This reduces the amount of available habitat for oysters, crabs, and other shellfish, and possibly for certain finfish species.

4. Chesapeake Bay sediments and water column contain elevated levels of certain toxicants, including heavy metals, pesticides, and other organic chemicals, most of them of anthropogenic origin. Some of these materials are known to be harmful to striped bass and young oysters at the ambient concentrations measured.

Other potential stresses (which along with the above, are discussed in EPA/CBP's report "Chesapeake Bay: A Profile of Environmental Change") include climatic variability, impacts of disease, and harvest by man.

17. Provide for the record the contract requirements for the Environmental Law Institute (ELI) review of existing Bay management mechanisms and the total contract cost.

Also provide the same information with respect to the Resources for the Future (RFF) contract.

ELI - See attachment A for Grant Proposal.
- See attachment B for Grant Agreement and Grant Award, including total contract cost ($192,802)

RFF - RFF was a sub-contractor for ELI. Their tasks are explained in section D of attachment A.
- RFF contract cost (attachment B) - $148,788

a. Where is this report available?

There is no final ELI report; however, the working papers are attached.

b. Should it receive wider circulation?

The ELI report is being used as input to Chapter 7 of the Management Report concerning future management alternatives for the Bay.

c. Have members of the Management Committee received it?

The Management Committee has not received the report, but it has received copies of the second draft of the Management Report.

Although the grant to the ELI had been made well before my involvement with EPA and the CBP, I have researched and contacted individuals familiar with that project. It appears, after reconstructing the activities that took place, that the progress on the project was to document and identify the management organizations that impact the Chesapeake Bay. Due to the nature of the information, the dynamic nature of government organizations, and the timing of its completion, the material was outdated when it was received. It was therefore considered to be useful for historical purposes but of little value for consideration of current management organizations.

18. Is EPA doing enough in its continuing abatement regulatory program to protect the Bay?

EPA is fulfilling all of its responsibilities under the Clean Water Act that apply to the Bay. Programs which accomplish this include an extensive construction grants program for municipal wastewater treatment facilities, overview of water pollution permit programs in the States, review and enforcement of Section 404 dredge and fill permits issued by the Corps of Engineers and review and approval of water quality standards issued by the States.

We intend to augment these programs with the long-awaited findings and recommendations of the Bay Program as presented in the Characterization and Management Reports

19. Do you agree that toxics are a significant source of Bay pollution? Does the EPA regulatory program sufficiently address toxics in the Bay?

Metals and organic toxicants in some portions of the Bay (such as the Patapsco and Elizabeth Rivers) have been shown to affect species composition and organism abundance. Microcosm studies demonstrate the toxicity of some Bay sediments.

The scientific literature indicates that concentrations of some heavy metals, synthetic organic compounds (including pesticides and herbicides), petroleum hydrocarbons and chlorine found in Bay waters can have chronic, or even acute, effects on organisms. In some portions of the Bay, the available historical, analytical and ecological information leads us to conclude that, most likely, there are environmental changes and effects which are not yet visible.

The EPA's regulatory program should continue development of water quality standards for toxicants and examine ways of incorporating the research and methodological results of the Program into the effluent discharge permit program.

20. Mr. Bibko, how much money has been obligated by the Bay Program to date since the Program's inception? How much of the current fiscal year funding has been obligated? For what work products?

In the chart below, I have provided a breakdown of the Chesapeake Bay Program's intramural and extramural obligations by funding class from fiscal year 1976 up to the present time.

Chesapeake Bay Program
Annual Obligations

Fiscal Year	Intramural Obligations	Extramural Obligations	Total Obligations
1976		Abatement & Control - $ 76,000	$ 76,000
1977		Abatement & Control - $ 557,000	$ 557,000
1978		Abatement & Control - $4,085,000 Research & Development - $5,527,000	$9,612,000
1979	Salary & Expenses - $1,344,000	Abatement & Control - $2,148,000 Research & Development - $ 968,000	$4,460,000
1980	Salary & Expenses - $1,057,000	Abatement & Control - $1,793,000 Research & Development - $2,547,000	$5,397,000
1981	Salary & Expenses - $ 507,100	Abatement & Control - $1,813,000 Research & Development - $2,503,000	$4,823,100
1982	Salary & Expenses - $ 277,900	Abatement & Control - $1,600,200	$1,878,100
1983	Salary & Expenses - $ 222,740	Abatement & Control - $ 865,310	$1,088,050

TOTAL OBLIGATIONS - $27,891,250
FY-76 - FY-83

To date, we have obligated $865,310 of the Chesapeake Bay Program's $900,000 extramural appropriation to complete the two remaining reports and provide for the transition activities mandated by Congress.

Characterization Study	$ 94,800
Management Report	193,000
Maintenance of Data Base and Technology Transfer	424,200
Monitoring	83,410
Public Participation	69,900
Total Obligations	$865,310

In addition, $222,740 of EPA's $300,000 intramural support allocation has been obligated for personnel and administrative costs.

21. Have there been any contracts, cooperative agreements, grants, or other funds obligated for which a complete product or service has not been delivered? Which ones? Why? Any work products significantly behind schedule? Why?

When I assumed overall responsibility for the Program several months ago, these and other administrative questions were raised by me to the staff. I have initiated steps to answer them prior to September 30, 1983. In checking through our past and current records of approximately 40 contracts, cooperative agreements, interagency agreements, and grants, we have found that all products and services for which funds were obligated have been delivered in some form. However, there exist inactive files, which have not been formally closed out from a grants administrative viewpoint. I expect to have more definitive information on these issues in the near future.

22. Do you believe further assessment of the relationship between point and non-point sources of pollution is a priority for the Bay?

We believe the Chesapeake Bay Program Watershed Model effectively assessed point versus non-point sources of pollution to the Bay. However, there is a need for the States to perform site-specific analysis of sub-basins and further evaluation of the effectiveness of point and non-point source controls. As States develop and submit specific strategies to meet water quality standards, EPA will review them for approval.

23. Do you believe the Agency has fulfilled its Congressional mandate in carrying out the Chesapeake Bay Program? Are there any areas or work products which have not been completed satisfactorily? Has your General Counsel reviewed the Congressional intent with regard to this program as spelled out in Senate Appropriations committee reports beginning with 1976? Has your Counsel reviewed the Program's work products and contracts and reached a conclusion with respect to fulfillment of the Congressional mandate? Is that review in writing? Submit for the record and summarize.

The Regional Counsel's Office has reviewed the Congressional intent with regard to this Program, as spelled out in relevant, available materials. Robert Collings, Chief of the Water and RCRA Enforcement Branch in that office, has also reviewed the work products to date and provided a written opinion. Copies are provided.

In summary, the legal opinions indicate that our objectives are consistent with the congressional mandate. Monitoring and laboratory work has developed a data base, and scientific conclusions have been drawn from that base. Implementation options for a control and abatement program are being developed, along with proposals for management structures to run the programs. EPA understands the need to oversee selection of a control program and management structure, and to push for rapid implementation. I would point out that EPA's authority under the Clean Water Act includes review and, where necessary, setting of water quality standards. Of course, we also understand the need for careful attention to existing programs, which can afford substantial protection to the Bay prior to and during the selection and implementation process. We must be careful not to neglect the important public participation and federal-state-local coordination tasks, which Congress mandated as part of this this program.

24. Why does EPA propose to donate the data base to the states? Doesn't EPA foresee a continuing future need to share the cost of data maintenance and up-date through an annual water quality sampling survey? Would you estimate the user cost of the system?

The tremendous data base compiled during the five-year program, as well as the water quality models, will greatly enhance the States' abilities to examine water quality standards, NPDES permit limitations, and other site-specific recommendations. Since these functions have been delegated to the States, it is logical that they would derive the greatest benefit from the data base. In addition, much of the existing monitoring of water quality and living resources is carried out by the states, supported in part by Federal funding. Likewise, it is logical that the States could most efficiently up-date the data base. EPA is donating the data base, the water quality models, and the computer system to the States as part of the Program's technology transfer process. EPA's Office of the Comptroller and Office of Management Information and Support Services have recommended that the computer be transferred to the States by means of a revokeable license and be physically located in the Central Regional Laboratory in Annapolis. The States of Maryland, Virginia and Pennsylvania would have to agree and make the necessary arrangements to assume responsibility for the operation and maintenance of the computer. The States have the option of covering these costs using Federal grant funds available under Sections 106 and 205(j) of the Clean Water Act. The States could also use their own funds or a combination of funding sources.

Would you estimate the user cost of the system?

At the current time, we are not certain of what the cost to a user of the computer system might be. We anticipate this issue issue to be decided by the Management Committee within the next few months as part of the transition phase of the Program.

25. Who is on the "Monitoring Team"? Who chairs? Is the membership official representation? What is its purpose? When will their recommendations on monitoring be available? And to whom? Is this group supposed to determine what water biology and chemistry to sample for?

Linda Davidson	EPA/CBP
David Flemer	EPA/CBP
Gail Mackiernan	UWF/CBP
Charles Bostater	MD DNR
Mike Haire	MD OEP
John Roland	VA SWCB
Ellen Gilinsky	VA SWCB
Jerry Hollowell	PA SRBC

OEP - Office of Environmental Programs
SWCB - State Water Control Board
SRBC - Susquehanna River Basin Commission
UWF - University of West Florida

a. Who chairs?

Dr. David Flemer and Linda Davidson.

b. Is the membership official representation?

The monitoring team is a working body composed of technical people. All its products are reviewed by other Bay scientists, managers and citizens.

c. What is its purpose?

To propose a Bay-wide monitoring strategy that will interface monitoring and research, and to outline a data management plan.

d. When will their recommendations on monitoring be available? And to whom?

The recommendations will be made available in this fiscal year to the states, Federal agencies, educational institutions and citizens groups involved in Chesapeake Bay.

e. Is this group supposed to determine what water biology and chemistry to sample for?

This group will suggest biological and chemical variables to be sampled.

26. Did the Program measure trends in water quality against one base year? For example, you state the Potomac, Nanticoke and Choptank Rivers are showing improved water quality. Improved over what? You also state there has been a "recent" decline in submerged aquatic vegetation. What is "recent"?

Trends in water quality were assessed for each Bay segment over the period of record. For most areas, data is available only for the past 15 years (or less). Regression of nutrient parameters over time were used to identify statistically significant trends. In some cases, trends in certain variables changed over time. For example, in the Potomac, total phosphorus in the summer increased from 1965 to 1972, then has declined to present; both trends are statistically significant. A significant decline in either phosphorus or nitrogen was considered an improvement in water quality.

Submerged vegetation trends were assessed on three time scales:

1. Biostratigraphic, through analysis of sediment cores, over past 400-500 years in selected sites.
2. Historical, through use of past Bay surveys and archival aerial photographs, over past 50 years in selected sites.
3. Recent, through use of USF&WS survey data, EPA/CBP sponsored aerial surveys, and statistical analysis of these data, over past 10-12 years for upper Bay and past 5 years lower Bay.

These analyses reveal that SAV was present continuously over the past 400 years in most areas surveyed. Species composition was observed to change, particularly after major land clearing in mid-1800's. Vegetation presently occupies the smallest habitat area within this historic time period. Major losses have occurred in the past 10-15 years, particularly in upper and mid-Bay tidal fresh areas, and major tributaries. Declines started first in upstream areas and are progressing down-Bay. Patterns of loss parallel patterns of nutrient enrichment.

27. Have the States used the models or expressed interest in using them? Why or why not?

The states are definitely interested in using the models because the they will be essential tools for assessing the impact of various control strategies. A commitment has already been made to train appropriate State personnel in the use of the models and the States plan to install remote computer terminals for better access to the models. Further evidence of State interest is Maryland's decision to purchase equipment, at considerable expense, to enhance the computer capability.

28. How will the model provide control strategies? Won't it just tell you what will happen if certain factors (e.g., nutrients) are introduced?

True, the models predict the impact on water quality of increases or reductions in nutrients associated with control strategies. EPA and the States, however, must define the control strategies that are tested on the model and then analyze the significance of the modeling results for implementation.

a. Isn't it true that decisions on how, where, and cost of control are yet to be determined?

True, we have developed approximate cost estimates for various control strategies for major areas of the Bay. However, site-specific details regarding treatment plant locations, and treatment technologies for existing facilities will not be developed by the Bay Program. Under the Clean Water Act, decisions such as these must be made cooperatively by State and local governments with EPA oversight and guidance.

29. You say the management report, in addition to recommending control strategies based on cost/benefit analyses, will summarize the Program's findings. Isn't that what the Characterization Report is supposed to do?

The Management Report will briefly summarize the scientific findings of the program in the initial chapters (see table of contents). This is necessary to enable the reader to understand the "State of the Bay" and the need for management alternatives. However, the balance of the management report deals with our model results on pollutant sources and loadings, the effectiveness of specific control programs, a monitoring plan to evaluate Bay management strategies, and a series of alternative mechanisms/structures to manage the Bay.

Management Report
Table of Contents

Chapter	
I	An Introduction to Chesapeake Bay
II	State of the Bay
III	Pollutant Sources and Loading
IV	Water Quality Control Programs and Control Options
V	Bay-wide Management Strategies
VI	Bay-wide Monitoring/Research Strategy for the Bay
VII	Management Mechanisms for Chesapeake Bay Water Quality

Appendix	
A	Environmental Quality Classification System
B	Summary Tables
C	Existing Programs
D	Monitoring

30. Describe the "Action Plan" that is to result from the Management Report.

The Management Report, to be completed by September 30, 1983, will use the technical knowledge gained during the five-year program and water quality models now being verified, to identify water pollution control alternatives to manage the Bay. Both point and non-point source controls have been evaluated for costs and benefits for sub-basins within the entire Chesapeake Bay system. As required by our Congressional mandate, the Management Report will examine existing institutions and governmental responsibilities, as well as new potential arrangements, to carry out the recommendations of the Bay Program. The final version of the report will highlight alternatives considered to be the most feasible and effective. A draft version of the report is undergoing peer review and State comment. The formal process to build a consensus among State and local governments and user groups can only extend from mid-March through the end of August in order to permit timely distribution of the final report. However, oportunities for public input will not stop then. Concurrent with consensus building will be preparations within the States for the Governors' Conference that Maryland and Virginia are planning to hold at the end of November. This conference will address the larger issues of implementation, including government responsibilities and resource commitments which can only be made after the States have completed their budgetary process and have reached a consensus. An action plan which details how specifically the Bay Program's recommendations will be implemented by the States and EPA is expected at that time.

As I have previously stated, EPA will certainly incorporate the findings and recommendations of the Bay Program in current programs such as construction grants and permit issuance and review. Thus, EPA will undertake unilateral actions and include them in the Management Report. This will begin upon Report completion. Although the action plans may not be finalized until the Governors' Conference, we will also take the initiative through our role as mediator of interstate water quality standards revisions to press the States to set appropriate standards based on the Bay Program's findings.

31. Who is invited to the workshops? Official representatives of government, private industry, agricultural community?

Two distinct sets of workshops are planned as part of Bay Program activities. The first set will cover the Monitoring Strategy. Bay scientists who have been or are involved in field monitoring in Chesapeake Bay will be invited to participate by Federal and State agencies, private industry, and citizens groups. These workshops will be informal, working meetings. Formal presentations of monitoring proposals will take place at the Governors' Conference on Chesapeake Bay planned for Fall of 1983.

The second set of workshops specifically relates to the consensus building process leading up to the Governors' Conference. The Chesapeake Bay Conference Steering Committee is already actively planning for the conference. The workshop participants will include representatives of government, citizens groups, private industry, and the agricultural community. Fisheries management, habitat restoration, water use, and water quality monitoring are among the topics being considered for discussion.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

MAR 18 1983

Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D.C. 20510

Dear Senator Mathias:

As you know, I recently had the opportunity to testify before you as Chairman of the Senate Committee on Governmental Affairs, Subcommittee on Governmental Efficiency and the District of Columbia on the subject of the Chesapeake Bay. I found the hearing helpful in emphasizing the great concern that people have about the timely completion of final work products of the Chesapeake Bay Program by Region III of the United States Environmental Protection Agency. I think that the hearing was also very useful in helping to develop a mutual understanding of Region III's lead responsibility in assuring timely implementation of proper management strategies under the Federal Clean Water Act Amendments. However, in order to further this understanding, I am attaching our response to the thirty-one questions submitted to me by the Subcommittee for our review and comment.

In addition I have decided to give you the detailed schedule for each of the commitments that Region III has promised to fulfill in completing the transition phase of this Program.

I am providing you with this in-house schedule in order to better allow you (and all other interested Members of Congress) a better opportunity to help me assure the timely and proper completion of our work product.

More specifically, I am providing this level of detail to you because I believe it essential that each step in the schedule be met in order to assure timely completion of each major product and to emphasize to my staff that unnecessary delays simply will not be tolerated.

Let me begin by re-stating for the record our existing promise to the Subcommittee. This constitutes the schedule for delivering each major product that my staff has agreed upon. The schedule for each major product may be summarized as follows:

1. Characterization Report

The Characterization Report will include a discussion of the present state of the Bay and its relationship to the natural resources in and around the Bay based on the research compiled through the efforts of the Chesapeake Bay Program. The agreed upon schedule for producing this product is as follows:

a. March 21, 1983 - Begin technical editing

b. April 15, 1983 - Send to Management Committee and Region III for review

c. April 29, 1983 - Send to Headquarters for Peer Review

d. May 23, 1983 - Final review comments received

e. June 13, 1983 - Complete incorporation of review comments; Send to Region III

f. July 25, 1983 - Complete typing/typesetting; Begin proofreading

g. August 8, 1983 - Complete proofreading; Send to Printer

h. September 1, 1983 - Distribution to Congress, States, and interested parties

2. Management Report

The Management Report will include a compilation of monitoring alternatives and options available from which the States of Maryland, Virginia, and Pennsylvania may choose in selecting an implementation plan for beginning to solve identifiable problems in the Bay. The agreement of the States to such a plan ought to result from consensus derived out of technical workshops held between the States during the summer of 1983 and announced at a subsequnet meeting of high level representatives from these States. However, realizing that such a consensus may not be reached by the States by September 30, 1983, EPA will propose recommended implementation strategies that should be considered by the States in proposing changes in water quality standards (needed to protect the Bay) as required under the Federal Clean Water Act Amendments. The agreed upon schedule for providing this product is as follows:

a. March 21, 1983 - Send Draft to EPA Headquarters for review

b. April 15, 1983 - Comments received from Peer Review, EPA Headquarters review, and the Management Committee

c. May 15, 1983 - Final Draft report to Management Committee and Region III

d. May 30, 1983 - Send for final Headquarters Peer Review

e. June 20, 1983 - Final review complete

f. July 11, 1983 - Complete incorporation of comments and send draft to typist; Send to Region III

g. August 22, 1983 - Complete proofreading and send final to typist

h. September 7, 1983 - Send to printer

i. September 30, 1983 - Distribution to Congress, States, and interested parties

3. Executive Summary

This will be a well-written summary of the contents and proposals embodied in the more voluminous Management Report. It will concentrate on clearly stating precise and specific control options recommended to protect the Bay. The agreed upon schedule for producing this product is as follows:

a. March 25, 1983 - Complete outline

b. April 1, 1983 - Circulate for comments

c. May 1, 1983 - All comments received

d. May 30, 1983 - Finish first draft; Mail for review

e. June 21, 1983 - Receive comments and begin to incorporate changes

f. July 11, 1983 - Send to typesetter for first version and submit to Region III

g. August 22, 1983 - Complete proofreading, editing, and send to typesetter

h. September 7, 1983 - Send to printer

i. September 30, 1983 - Distribute to Congress, States, and interested parties

4. Technology Transfer to States

EPA is committed to assuring that the computer operation with the research efforts of the Bay Program included are properly and successfully moved from the present location (the CBP offices in Annapolis) to the Central Regional Laboratory in Annapolis, according to the above time schedule. As well, we will be responsible for assuring that the appropriate State staff members have been trained and are qualified to operate that computer equipment. These efforts should go a long way to compleitng our responsibilities of assuring technology transfer to the States for their use in implementation after September 30, 1983. Moreover, timely completion of this task is critical to the States' ability to timely initiate modeling activities needed to begin in the water quality standards review process. The agreed upon schedule for producing this product is as follows:

a. March 3, 1983 - Begin writing User's Guide

b. April 15, 1983 - Circulate User's Guide for comments to States' computer people

c. June 1, 1983 - Receive and begin to incorporate comments into Final User's Guide

d. July 15, 1983 - Computer physically in place at Central Regional Laboratory at Annapolis

e. August 15, 1983 - Computer on-line and operational

f. August 15, 1983 - Training of State staffs on computer begins

g. September 15, 1983 - User's Guide distributed to States and interested parties

h. September 30, 1983 - Training of State staffs on computer ends

5. Public Participation

EPA is presently awaiting the submission of an intensive public participation schedule from the Citizens Program for the Chesapeake Bay, Inc. in the very near future. We will be happy to provide this information to you as soon as it is made available to us.

Please review the above commitment and give me your concurrence or any comments that you might have. The schedule can be adjusted for good reason, if nesessary, so long as it is possible to re-direct the effort as may be required.

In order to maintain clear lines of communication between our offices, I will be in personal contact with your office regarding the continuing status of the transition phase. In this manner, I hope to be able to personally provide your staff with periodic reports of the status of the transition phase and can also be readily available if your staff has any questions or concerns.

I am enclosing copies of memoranda identifying principal EPA staff members responsible for fulfilling the day-to-day operation of the transition phase. As you will note, these memoranda serve to outline the responsibilities of each of the key EPA employees in the completion of the Chesapeake effort. The roles of each of these individuals clearly requires that the schedule established herein is followed and completed accordingly.

Please feel free to have your staff continue to contact my Congressional Liaison, Larry Teller, at any time or, at their election, he will arrange direct contact with the appropriate Program staff. Also please note that, in addition, I am requiring my managers to provide copies directly to you of any proposed schedule changes which may be proposed to me in writing.

I hope that this information provides you with a clearer timetable for the completion of this project and affirms our commitment to fulfilling the research effort mandated by Congress.

If you have any further questions or concerns, please feel free to contact me. I would particularly welcome the opportunity to meet with you to further discuss the contents of this letter if you so desire.

Sincerely yours,

Peter N. Bibko
Regional Administrator

Enclosures

cc: Senator Paul Sarbanes
Senator John Warner
Senator Paul Trible
Senator John Heinz
Senator Arlen Specter
Maryland Congressional Delegation
Virginia Congressional Delegation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III – 6th & Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Responsibilities Under the Chesapeake Bay Program **DATE:** MAR 18 1983

FROM: Peter N. Bibko
Regional Administrator

TO: Greene A. Jones, Director
Water Management Division

As the formal completion of the Chesapeake Bay Program approaches, I am attempting to clearly define the commitments and promises that the Region III office has made to Congress by forwarding a revised schedule of those products that must be delivered to Congress prior to September 30, 1983 to members of the Maryland and Virginia congressional delegation, and Senators Heinz and Specter of Pennsylvania.

Specifically, your role during the coming months is critical to timely completion of the Program. As Division Director you will be responsible for the overall Program and for the completion of all products and efforts by EPA consistent with the revised schedule being forwarded to Congress. You will be accountable for the oversight of all daily activities, for timely completion of all EPA responsibilities, developing and implementing policy considerations as determined, and for ensuring proper regional oversight of all program acitivities.

I will be forwarding a copy of the revised schedule that will be sent to Senator Charles Mc C. Mathias, Jr. and other members of Congress as notice of our remaining time line for completion of the Program. As I have promised Senator Mathias and other members of Congress, if any changes in this schedule occur between now and September 30, 1983, you should personally provide me with a written memorandum explaining this proposed change, the reason for the change, and the resulting date of completion for the particular effort promised. In each instance, this memorandum should be copied to Senators Mathias, Sarbanes, Warner, Trible, Heinz and Specter, as well as all other members of the Maryland and Virginia congressional delegations at the same time it is sent to me. This should assure that all concerned members of Congress are aware of our activties over the coming months with regard to completing the Program and will improve our communication with Congress and provide them with the type of a frequent critical status report that these concerned members deserve.

In addition, I have asked Senator Mathias (and others interested) to contact me with any suggested changes that they would like to propose for this schedule. I hope we can give all such proposals primary consideration and are able to implement them accordingly. Please give all congressional members and their offices your complete cooperation in implementing their ideas and proposals and be sure that our entire staff provides any assistance required by all congressional offices.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III — 6th & Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Responsibilities Under the Chesapeake Bay Program **DATE:** MAR 18 1983

FROM: Peter N. Bibko
Regional Administrator

TO: Leonard Mangiaracina, Deputy Director
Water Management Division

As the formal completion of the Chesapeake Bay Program approaches, I am attempting to clearly define the commitments and promises that the Region III office has made to Congress by forwarding a revised schedule of those products that must be delivered to Congress prior to September 30, 1983 to members of the Maryland and Virginia congressional delegation, and Senators Heinz and Specter of Pennsylvania.

Specifically, your role during the coming months is critical to timely completion of the Program. As Deputy Division Director you will be the Region III focal point for all day-to-day activities of the Program. It will be your responsibility to communicate and coordinate all policy decisions to and with staff working on the Program. You will be accountable for specifically tracking the daily efforts of all Program personnel to ensure that all critical goals and deadlines are met. You will also oversee all daily administrative aspects of the Program, and are ultimately responsible for completing all elements of the revised schedule submitted to Congress on time.

I will be forwarding a copy of the revised schedule that will be sent to Senator Charles Mc C. Mathias, Jr. and other members of Congress as notice of our remaining time line for completion of the Program. As I have promised Senator Mathias and other members of Congress, if any changes in this schedule occur between now and September 30, 1983, you should personally provide me with a written memorandum explaining this proposed change, the reason for the change, and the resulting date of completion for the particular effort promised. In each instance, this memorandum should be copied to Senators Mathias, Sarbanes, Warner, Trible, Heinz and Specter, as well as all other members of the Maryland and Virginia congressional delegations at the same time it is sent to me. This should assure that all concerned members of Congress are aware of our activties over the coming months with regard to completing the Program and will improve our communication with Congress and provide them with the type of a frequent critical status report that these concerned members deserve.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III – 6th & Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Responsibilities Under the Chesapeake Bay Program **DATE:** MAR 18 1983

FROM: Peter N. Bibko
Regional Administrator

TO: Virginia Tippie, Technical Director
Chesapeake Bay Program

As the formal completion of the Chesapeake Bay Program approaches, I am attempting to clearly define the commitments and promises that the Region III office has made to Congress by forwarding a revised schedule of those products that must be delivered to Congress prior to September 30, 1983 to members of the Maryland and Virginia congressional delegation, and Senators Heinz and Specter of Pennsylvania.

Specifically, your role during the coming months is critical to timely completion of the Program. As the Technical Director you are directly and ultimately responsible for the completion of all technical aspects of the Program in a manner that allows Region III to meet its commitment under the revised schedule being submitted to Congress. You will also be directly responsible to insure that all policy directives are properly implemented in the daily technical function of the Program. You are also directly accountable through Joseph Piotrowski for all administrative aspects of the Program. Finally, it is your ultimate responsibility to develop all realistic alternatives and options that EPA may present in the Management Report as methods that, if chosen and exercised by the States, would lead to implementing a program that will begin to obtain environmental improvement and stability in the Bay.

I will be forwarding a copy of the revised schedule that will be sent to Senator Charles Mc C. Mathias, Jr. and other members of Congress as notice of our remaining time line for completion of the Program. As I have promised Senator Mathias and other members of Congress, if any changes in this schedule occur between now and September 30, 1983, you should personally provide me with a written memorandum explaining this proposed change, the reason for the change, and the resulting date of completion for the particular effort promised. In each instance, this memorandum should be copied to Senators Mathias, Sarbanes, Warner, Trible, Heinz and Specter, as well as all other members of the Maryland and Virginia congressional delegations at the same time it is sent to me. This should assure that all concerned members of Congress are aware of our activties over the coming months with regard to completing the Program and will improve our communication with Congress and provide them with the type of a frequent critical status report that these concerned members deserve.

In addition, I have asked Senator Mathias (and others interested) to contact me with any suggested changes that they would like to propose for this schedule. I hope we can give all such proposals primary consideration and are able to implement them accordingly. Please give all congressional members and their offices your complete cooperation in implementing their ideas and proposals and be sure that our entire staff provides any assistance required by all congressional offices.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III – 6th & Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Responsibilities Under the Chesapeake Bay Program **DATE:** MAR 18 1983

FROM: Peter N. Bibko
Regional Administrator

TO: Joseph Piotrowski
Water Management Division

As the formal completion of the Chesapeake Bay Program approaches, I am attempting to clearly define the commitments and promises that the Region III office has made to Congress by forwarding a revised schedule of those products that must be delivered to Congress prior to September 30, 1983 to members of the Maryland and Virginia congressional delegation, and Senators Heinz and Specter of Pennsylvania.

Specifically, your role during the coming months is critical to timely completion of the Program. You are responsible for the tracking of administrative, budgetary, and grant isues and will oversee the technical review of all documents and products (i.e., Characterization and Management Reports). You will be accountable to coordinate regional review of these products. You will serve as the day-to-day regional contact with the Program regarding administrative and technical issues.

I will be forwarding a copy of the revised schedule that will be sent to Senator Charles Mc C. Mathias, Jr. and other members of Congress as notice of our remaining time line for completion of the Program. As I have promised Senator Mathias and other members of Congress, if any changes in this schedule occur between now and September 30, 1983, you should personally provide me with a written memorandum explaining this proposed change, the reason for the change, and the resulting date of completion for the particular effort promised. In each instance, this memorandum should be copied to Senators Mathias, Sarbanes, Warner, Trible, Heinz and Specter, as well as all other members of the Maryland and Virginia congressional delegations at the same time it is sent to me. This should assure that all concerned members of Congress are aware of our activties over the coming months with regard to completing the Program and will improve our communication with Congress and provide them with the type of a frequent critical status report that these concerned members deserve.

In addition, I have asked Senator Mathias (and others interested) to contact me with any suggested changes that they would like to propose for this schedule. I hope we can give all such proposals primary consideration and are able to implement them accordingly. Please give all congressional members and their offices your complete cooperation in implementing their ideas and proposals and be sure that our entire staff provides any assistance required by all congressional offices.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III – 6th & Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Legislative Authorizations & Conditions of Chesapeake Bay Funding

DATE: FEB 28 1983

FROM: Robert L. Collings,
Chief, Water & RCRA Enforcement Section
Office of Regional Counsel (3RC12)

TO: Peter N. Bibko
Regional Administrator (3RA00)

My review of the legislative record accompanying the supplemental FY 83 funding for this program indicates that our current measures do address the concerns of the Congress. The statement of Representative Dyson of Maryland in the Congressional Record (page H7019, September 15, 1982) emphasizes the need for continuity of the program during the completion of the originally funded program and the transition to a control and abatement program developed from the Bay program findings. This continuity is to be provided in several respects:

1. Continuation of EPA presence on the Bay during this period.
2. Maintenance of computer data base.
3. Maintenance of Bay monitoring program.
4. Continued efforts to involve resource users in program activities.

The Chesapeake Bay program managers have reviewed their activities consistent with this guidance. As I understand it, the only difference of opinion with our actions concerns timing. From our perspective, completion of the Management Report will identify the control and abatement options, then feasibility from technical, social, legal, administrative and economic perspectives, and the necessary legislative and regulatory actions, including institutional frameworks to be developed.

As I understand it, the next development stages for the Report will involve further scientific peer review and, equally important, further public participation. This participation, with significant planned input by resource users, is part of our obligation under the authorization for FY 83. As such, it is important that EPA not preempt the recommendations and advice of the public by establishing special control and abatement programs in advance of the development of a final set of recommendations. See Dyson statement, page H7019 Congressional Record (9-15-82).

EPA, as the responsible federal agency, is obligated to produce these recommendations as quickly as possible, consistent with our overall objectives of scientific accuracy, active involvement by State and local governments, and public participation.

Following the current period of Management Report completion, there may be a transition period during which the final recommendations are out but necessary implementing actions have not been taken. You have asked me what EPA can do to protect the Chesapeake Bay if such a transition period occurs. As background, you have stated your intent to use the resources funded through the FY 83 budget as vigorously as possible to complete the Report and implementation tasks.

If implementation is not completed this year, existing federal environmental programs will continue to afford substantial protection to the Bay. The extensive data base can be used by the States to develop water quality standards and, as needed, point source discharge wasteload allocations under Section 303 of the Clean Water Act, 33 U.S.C. § 1313. The National Pollutant Discharge Elimination System permit program can use this water quality data in reviewing and issuing point source discharge permits under Section 402 of the Clean Water Act, 33 U.S.C. § 1342. Similar use of data from the Potomac River modelling efforts in NPDES permits for Maryland, D.C., and Virginia have substantially improved the water quality of the Potomac River.

Areawide planning programs under Section 208 of the Clean Water Act, 33 U.S.C. § 1288, can be developed to implement nonpoint source control. Abatement of toxic and hazardous wastes in the environment is being done under the Toxic Substances Control Act, 15 U.S.C. § 2601 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., and the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601 et seq.

Spills and non-routine discharges of oil and hazardous substance are regulated under Section 311 of the Clean Water Act, 33 U.S.C. § 1321. Dirt and other solids, which can affect aquatic biota and vegetation, may be released into the Bay and its tributaries by filling activities in the waters and adjacent wetlands. Rigorous enforcement of wetlands regulations by EPA is conducted, in conjunction with the U.S. Army Corps of Engineers, under Section 404 of the Clean Water Act, 33 U.S.C. § 1344.

Therefore, while it is clear that the supplemental budget is intended to move as far as possible toward full implementation of the control and abatement recommendations in the Management Report, it is equally clear that other programs will complement this effort and provide protection to the Bay during any transition period.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III – 6th & Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Legislative Objectives for Chesapeake Bay Program

DATE: JAN 18 1983

FROM: Robert L. Collings
Chief, Water & RCRA Enforcement Section (3RC12)

TO: Peter N. Bibko
Regional Administrator (3RA00)

You have asked me to review the legislative authorizations for the Chesapeake Bay Program, and summarize the tasks imposed on EPA by these bills. The only clear expositions of objectives are contained in the Senate Appropriation Committee Reports, copies of which were obtained from Larry Teller and are attached.

In summary, they ask EPA to do the following:

(1) Assess factors having an adverse impact on Chesapeake Bay environmental quality, from scientific and user perspectives.

(2) Develop a central repository for data on the environmental quality of The Chesapeake Bay. Collect data, and create a continuing capability for data collection, storage and analysis.[1]

(3) "Determine what units of government have management responsibility for the environmental quality of the Chesapeake Bay and define how such management responsibility can best be structured so that communication and coordination can be improved not only as between the respective units of government but also between those units and research and educational institutions, and concerned groups and individuals on the Chesapeake Bay". Sen. Rep. 94-326,[2] p. 48. This appears to recommend a lead role for EPA in deciding who the responsible federal and state government agencies are to manage the Bay Program in its abatement and control phase, and in suggesting how the program should be run by the responsible managers.

Copies of the committee reports are attached.

1/The Chesapeake Bay Research Coordination Act, P.L. 96-460, 94 Stat. 2044 (1980) is also relevant. This Act creates the Chesapeake Bay Research Board, an intergovernmental (federal-state) entity responsible for coordinating Bay Research to achieve wise management and enhancement of Bay resources, and avoid duplicative research. The Board's staff are in the Office of Chesapeake Bay Research Coordination, established within the U.S. Department of Commerce. 16 U.S.C. § 3001 et seq

2/ From discussions with Program staff, I have learned of a great deal of informal legislative guidance has been provided by the staff of Senate committee members. This may also be considered in defining our goals, but does not carry the mandate of a formal legislative action such as a committee report or a bill.

cc: Lawrence Teller
Robert Taylor
Leonard Mangiaracina
Sheldon M. Novick

Senator SARBANES. The hearing is now adjourned.

[Whereupon, at 12:55 p.m., the subcommittee was recessed, to reconvene subject to the call of the Chair.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

August 11, 1982.

Hon. Anne M. Gorsuch,
Administrator, Environmental Protection Agency,
Washington, D.C.

DEAR MRS. GORSUCH: We regret that circumstances prevented you from joining us for a boat tour of the Potomac River Monday, August 2, to discuss EPA's future role in Chesapeake Bay environmental protection.

Everyone seems to agree that we had a productive session. We would like to follow up on what we feel are important future steps that must be taken for a successful implementation of the Bay program's findings.

It is critical to maintain a strong federal presence on the Bay. This is necessary because of the interstate boundaries of the watershed and conflicting water quality and resource management jurisdictions. As you know, because of EPA's effort, for the first time in our memory, Maryland, Virginia and Pennsylvania have worked together in a cooperative manner. We have every reason to believe, however, that without future federal involvement this relationship will disappear.

What follows are some specific proposals as to how we feel EPA should be involved in the future.

First, the progress made to date in interstate coordination of water quality and water resource issues will fall by the wayside without a resident EPA office located physically on the Bay. We cannot stress too strongly the need for such an office which is staffed by professional program managers as presently exist.

The role EPA has been playing in bringing all of the Bay actors to the same table has been a success and should continue. We were encouraged when Mr. Bibko stated his willingness to designate an Office of Chesapeake Bay Liaison as was originally proposed in a November 24, 1981, letter to Mr. Bibko from Senator Mathias. Our only concern with his proposal was that apparently the office and its personnel would be located in Philadelphia, rather than on the Bay proper.

The history of the EPA Bay Program has shown that basing the program staff in Philadelphia simply will not work. An EPA presence in the form of program coordinators on the Bay meeting with Bay users on a daily basis is needed. We suggest you continue the present five positions in Annapolis and devote approximately $75,000 annually to Bay user participation activities. The Citizens Program for Chesapeake Bay has performed an invaluable service of convening the Bay actors and sharing the program's findings with a wide and diverse audience.

Second, the recommendation of a continuing entity involving all of the Bay actors in a meaningful way is critical to implementation of a comprehensive Bay strategy. The 1976 Senate Appropriations Committee report was quite clear in this regard. EPA was directed to

> . . . determine what units of government has management responsibility for the environmental quality of the Chesapeake Bay and define how such management responsibility can best be structured so that communication and coordination can be improved not only as between the respective units of government but also between those units and research and educational institutions, and concerned groups and individuals on the Chesapeake Bay. This final facet of the study should review not only ways to improve existing Chesapeake Bay management mechanisms, but also new alternatives which seem promising. (Senate Report 94-326)

We look forward to EPA's recommendations in this regard, taking into account the states' concerns for a prominent role in such an entity, but recognizing there are other federal agencies, educational and research institutions, and private companies which play key roles in affecting the water quality of the Bay. We would expect the options for a continuing management entity would also address in a creative way the means of financing such an entity and in defining its responsibilities.

Third, management options, not to be confused with a proposal for a management entity, are one of the principal products of the program. They are intended to point the way for EPA and the states to ensure that the Bay's water quality is not further degraded and that clean water standards are met. We want to assure ourselves that these management options are workable in the view of both the states and EPA. We look forward to this publication and a wide distribution to the Bay user audience.

Fourth, the Bay program has generated an excellent baseline against which future research can measure trends and tell whether water quality is improving or declining. It is important, therefore, that this data base be maintained. We were delighted to hear Mr. Bibko state that Region III has already initiated steps toward continuation of the data base after September 30, 1982.

It is our understanding that the states of Maryland and Virginia together have offered to defray 50 percent of the annual maintenance cost of the data base, estimated to total $250,000. This would leave an unfunded cost of $125,000 for EPA to pick up along with a one-time $70,000 expenditure to expand the memory and modeling capacity of the system. The state of Pennsylvania has expressed an interest in using the modeling capacity of the data base on a user fee basis, so it would contribute immensely to the cooperative state effort if EPA were to fund this additional capacity.

Fifth, it is essential that we utilize the knowledge gained to improve water quality in the Bay. This can only be accomplished through a carefully designed, limited annual water quality monitoring program. Mr. Eidness said his office will cooperate in the development of a Chesapeake Bay monitoring program which is compatible with national efforts and needs. Mr. Bibko stated that Region III monitoring efforts will be limited to those consistent with regional needs.

We believe more water quality monitoring stations are needed on the Bay to make an annual sampling program useful. EPA currently funds only about 55 monitoring stations on the Bay and its major tributaries. The one-time estimated cost for additional water quality monitoring stations is $750,000. The annual operation and maintenance cost is estimated to be approximately the same amount. The Office of Chesapeake Bay Liaison could serve as the program coordinator for this effort.

Sixth, one of the principal findings of the program is that nutrient enrichment is rapidly imbalancing the Bay. The Blue Plains Treatment Plant, which is funded from an EPA construction grant, is a success story of advanced wastewater treatment. It has cleaned up the Potomac, removing heavy concentrations of phosphorous. The next step, in this point source pollution control, is the removal of nitrogen from wastewater.

Seventh, another finding which corrects a common misunderstanding is that most of the Bay's non-point pollution problem stems from many other sources than farms which use herbicides and pesticides. Non-point sources pose an even greater threat to the Bay because they are so disperse. Yet there is little planning or management being carried out at any level of government to control these sources of pollution. The demographers tell us that the population of the Bay region will have doubled by the year 2000. The pressures that this population increase will exert on the Bay will generate all sorts of different non-point sources of pollution. We would like EPA to take the initiative in promoting state and local government programs to control non-point source pollution through the Office of Chesapeake Bay Liaison.

Eighth, Deputy Administrator Hernandez stated that Research and Development funds could be available for continuing research on Chesapeake Bay problems that have national significance. As you know, the Bay program ultimately addresses only three of ten proposed areas of investigation. There are others which could be added to that list, particularly the efforts of chlorine on Bay water quality. We would appreciate it if Dr. Hernandez would identify those areas of national significane to which the agency devotes or plans to devote research and development monies.

We can all take pride in the success of the EPA's Chesapeake Bay Program. This activity, in our opinion, has been an exemplary model of interstate cooperation and a cost-effective use of funds. It has provided us with many answers to the dynamics of the Bay's water quality which have national relevance. And it may have raised other questions about this ecosystem which future science should address. We are pleased to report that several of our colleagues on the Committee on Environment and Public Works, including the Chairman, have taken an active interest in this program and are hoping to explore the Bay program's findings in oversight hearings. Their hope, and ours, is that the program may provide some guidance for national policy and programs including the Clean Water Act reauthorization.

We hope that you will continue to work with us to assure that the progress made to date is reinforced through the modest continuation activities we have suggested here. We would hope to resolve the issues raised here with you prior to the end of the current fiscal year.

We look forward to rescheduling our Bay tour with you later this fall when the program findings have been published and distributed.

With best wishes,

Sincerely,

Charles McC. Mathias, Jr.,
John W. Warner,
U.S. Senators.

U.S. Senate,
Committee on Governmental Affairs,
Washington, D.C., November 5, 1982.

Hon. Anne M. Gorsuch,
Administrator, Environmental Protection Agency,
Washington, D.C.

Dear Mrs. Gorsuch: As you may recall, an August 11 letter to you from Senator Mathias and Senator Warner spelled out eight points related to future EPA actions on the Chesapeake Bay. Since then, the Congress has approved and the President has signed the fiscal year 1983 appropriations bill for your agency.

The abatement, control, and compliance budget function provided $900,000 for implementation of the EPA Chesapeake Bay Program. We direct your attention to floor colloquies in the House and Senate concerning this item at pages H7018-H7020 of The Congressional Record of September 15, 1982 and pages S12175-S12158 of The Congressional Record of September 24, 1982.

It might be useful for you if we were to spell out the purposes for which those funds are to be used:

1. Maintenance of data base: $125,000

With Maryland and Virginia sharing fifty percent of the cost of the data base, EPA must continue its share of maintenance costs.

In addition, the memory of the computer needs to be expanded to accommodate future modeling and additional data. This cost, estimated at $70,000, is not provided in the $900,000 earmark. It is our view that the agency should use part of its other abatement and control funds for this purpose.

2. Chesapeake Bay Liaison Office: $300,000

The current five positions of the Annapolis office should be continued to complete the Characterization Report and the Management Report. Completion of the Characterization Report and the Management Report are our first priority.

In addition, the Annapolis office should direct the annual water quality sampling program, assure the data is stored in the data base and measured against that baseline for trends, publish the findings of the annual water quality sampling, and continue liaison with the affected state regulatory bodies for water quality management strategies.

We recognize that these continuing program responsibilities will require additional staff beyond the present five positions and emphasize the importance of securing professional staff who are familiar with the dymanics of the Bay ecosystem. This federal presence on the Bay is imperative if the findings of the Bay Program are to be addressed.

3. Annual water quality monitoring: $400,000

This annual "pulse-taking" of the Bay's water quality is clearly called for if we are to measure future trends in the Bay's health against the baseline.

We look to your agency in coordination with Bay scientists to determine what water quality biology and chemistry will be measured. The Annapolis Liaison Office in conjunction with the resource user participation program have the established working relationships to determine this and to set a timetable for the annual sampling survey.

We would also expect that Office to identify any improvements needed in the sampling program and any needs for additional monitoring stations.

4. Resource user participation: $75,000

The public participation program has played a key role in bringing many of the Bay's user groups to the same table. Their growing common recognition and understanding of problems of Bay water quality is essential if positive steps are to be taken by both private and public sectors to reduce stress on the Bay's delicate ecosystem.

As we mentioned previously, this public participation mechanism can play an important role in defining what water quality indicators would be monitored on an annual basis by bringing together Bay scientists and users.

We continue to look forward to the agency's presentation of a proposed Bay management entity which would build on the good working relationships developed through the public participation program.

Lastly, it would seem appropriate for EPA to take the lead in convening a forum for all Bay users, scientists, and public agencies. The purpose of such a convocation would be for the agency to present the findings of the program and indicate where responsibilities lie for addressing those findings.

It would be extremely helpful to us and to the various state and local agencies in Maryland and Virginia to be advised of your thoughts in this matter and of your plans with respect to these specific points.

With best wishes,

Sincerely,

CHARLES McC. MATHIAS, Jr.
JOHN W. WARNER.
PAUL S. SARBANES.
ROY P. DYSON.
MARJORIE S. HOLT.

U.S. ENVIRONMENTAL PROTECTION AGENCY,
Washington, D.C., May 4, 1983.

Hon. CHARLES McC. MATHIAS, Jr.,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MATHIAS: Thank you for writing, with several of your colleagues, to provide guidance on the activities being undertaken by the Environmental Protection Agency's Chesapeake Bay Program under the $900,000 appropriated for FY 1983. Your letter was very timely, as a budget has recently been developed by EPA which, in concert with the States, was adopted by the Bay Program's Management Committee at its December 22, 1982 meeting. We are pleased that your letter was available to us during this period.

I sincerely regret that our reply was not made sooner. I can tell you that, given this delay in providing a written response, we have done our best to inform you of this year's budget and program through your staff. Further, I hope that EPA testimony and additional information provided for the record at the hearing of the Senate Governmental Affairs Subcommittee on Governmental Efficiency and the District of Columbia has also been helpful in clarifying what the Chespeake Bay Program is accomplishing this year.

Based on the budget that has been developed, I would like to address the major activities as they are discussed in your letter. Because the work categories are not identical, I am enclosing a copy of the budget summary from December Management Committee Meeting, which shows the projected uses for the total Chesapeake Bay Program budget of $1,490,500 and the sources of funding. You can therefore see that, in addition to the $900,000 appropriated specifically for the Chesapeake Bay Program, EPA is allocating $300,000 and the States over $300,000. We feel that the combined budget allocations will complete the two remaining reports and provide for the transition activities mandated by Congress.

MAINTENANCE OF DATA BASE

The Chesapeake Bay Program data base will be both maintained and enhanced by EPA and the States. To help assure this commitment, the computer will be relocated to our Annapolis Laboratory for continued use by the States and EPA, and other members of the Bay community, when the Program ends in September 1983. The capacity of the computer will be increased significantly by adding supplemental hardware which will be purchased by the States. Complete instruction will be provided to State personnel on the use of the data base and models. Further, access to the data base from remote Bay locations will be made available.

I believe that these action will bring about a proper and timely transition of a central data management and modeling capability so that EPA and the States and Bay community can effectively use them in the future for resource protection throughout the Bay area.

We agree that completion of the Characterization Report and the Management Report is first priority because of their fundamental importance to all future implementation decisions. Under the direct supervision of the Regional Administrator, technical direction and key staffing will continue to be located in Annapolis at least through the completion of the Chesapeake Bay Program. Because of the transition to an implementation phase, which is already beginning, it is not possible at this time to know which mix of future staffing and its location(s) will be most appropriate. Protection of Bay resources will be the principal concern in making these decisions later this year. However, as I stated above, steps are being taken to provide for proper location, operation and use of the computer. I can assure you that, when the Program ends, EPA will continue to provide leadership within the Bay community through the ongoing fulfilling of the Agency's various water quality management responsibilities under the Clean Water Act. The extensive data base and management information provided by the Bay Program will undoubtedly greatly enhance our and the States' capabilities to fulfill these responsibilities. We are not in a position at this time, prior to completion of the management report, to know the exact role that EPA and the States will play in implementing the Bay Program's findings.

Although the funds provided in the fiscal year 1983 appropriations bill for the Chesapeake Bay Liaison Office cannot be used to support Agency personnel positions, five full time positions have nevertheless been assigned to the Chesapeake Bay Program office in Annapolis. As of March 10, $222,740 of EPA's $300,000 intramural support allocation had been obligated for the personnel and administrative costs of the Annapolis office. In addition to the Agency personnel and numerous contractor personnel in Annapolis, EPA has also assigned other personnel in Region III to assits in the administration and report writing functions; this should also facilitate the transition to an implementation phase.

ANNUAL WATER QUALITY MONITORING

An important part of the Management Report will be a comprehensive water quality monitoring program. We expect that this program, which is being developed with Bay scientists, the States and other members of the Bay community, will provide for the annual "pulse taking" of Bay water quality on a continual basis. This role is most appropriate and will, we believe, directly enhance the future sampling and analysis activities undertakn by the public, private and academic sectors.

The establishment for the first time, and long-term maintenance of a centralized data base and management system will be the single most significant mechanism for ensuring that annual water quality monitoring will produce the kind of resource mangement information that is useful to Bay water quality managers and users. Monitoring activities are a part of several work categories in the budget summary.

RESOURCE USER PARTICIPATION

The Chesapeake Bay Program has long recognized that meaningful public participation is a key ingredient to both Bay research and management. Now that the scientific findings of the Program are virtually complete and development of management alternatives is well underway, we are directing our efforts to involving the Bay users and the States to the fullest extent possible. A number of categories in the December 22 budget summary involve interaction with Bay users, scientists, and the States. Further outreach efforts are being conducted. Part of this will be done by the Citizens Program for the Chesapeake Bay, Inc. through continued grant assistance.

Although it is not yet known if a single entity will be designed or established to manage Bay resources, we recognize our responsibility to recommend an appropriate intergovernment management structure. The Environmental Protection Agency continues to believe strongly that the participation and support of the Bay community as a whole are necessary to the successful completion of the Chesapeake Bay Program as well as to whatever management structure that emerges. Development of management structures to implement the findings of the Chesapeake Bay Program will continue to be an important part of the monthly meetings of the Bay Program's Management Committee.

EPA will hold a comprehensive forum with the Bay community later this year, in coordination with the Bay States' Governors conference, when the management alternatives are more clearly specified. It is our hope and expectation that Bay scientists and Bay users will attend the forum and exchange their views with the Federal and State officials who have the responsibility of developing the management plans that so directly affect the Bay community.

It appears to me that, if the work that has been budgeted this fiscal year is carried out as planned, the results of the Chesapeake Bay Program and its transition to implementation will be successful and consistent with Congressional intent in establishing and supporting the Program. I want you to know that we at EPA will continue to work toward this goal, ever mindful of the importance of the ongoing participation of the States and Bay community.

I trust that this information and commitment are responsive to the views expressed in your letter. Please contact me if you would like to discuss any part of this letter or the enclosed budget allocations. We will certainly keep you well informed of all developments as they occur and are willing to meet with you at any time to discuss the Program.

Sincerely yours,

LEE L. VERSTANDIG,
Acting Administrator.

Enclosure.

TABLE 1.—FINANCIAL NEEDS FOR FISCAL YEAR 1983—CHESAPEAKE BAY PROGRAM

[In thousands of dollars]

	General contractual	Computer contractual staff	EPA—personnel and administrative costs	O&M computer	Total
I. Completion of prod. (chara., manag., monit. with transition	305.6	114	160	65	667.5
	[1] 22.9				
Total	328.5				
II. Modeling	17	47.9	60	[2] 125	262.0
		[1] 12.1			
III. Technology transfer	101	60	80	[1] 65	271.0
				30	
				[1] 75	
Total	446.5	234	300	360	1,340.5

[1] Virginia.
[2] Maryland.

EPA contractual support	740.5
EPA intramural support	300.0
State support	300.0
Final products and transition	1,340.5
IV. Other costs:	
Printing (States will provide additional support as required)	40.0
Public participation:	
Maryland and Virginia may provide assistance	57.0
Pennsylvania	13.0
Program meeting or technical findings and conference planning (EPA will assist States in preparation of November 1983 conference)	40.0
Total	150.0
V. Operation and maintenance (includes purchase of computer hardware by States for transition)	360.0
Total costs:	
Final products and transition	1,340.5
Other costs	150.0
Total	1,490.5

U.S. Environmental Protection Agency,
Region III,
Philadelphia, Pa., December 16, 1982.

Hon. Charles McC. Mathias,
U.S. Senate,
Washington, D.C.

Dear Senator McC. Mathias: I have recently completed my first year as Regional Administrator of the Environmental Protection Agency's Middle Atlantic Region, and I want to succinctly review our accomplishments with an eye toward future goals. I would first note that while EPA's regional offices enjoy an unusual degree of independence in our relationships with government officials, industry and citizens, this office has enthusiastically implemented an utterly sensible environmental management philosophy: to design programs, review and write regulations, and evaluate environmental performance in terms of creating incentives for and realizing environmental improvement in a cost-effective manner, rather than in terms of the level of government and industry dollar inputs. This objective is fully consistent with the Administration's overall regulatory reform initiative which attempts to modify or eliminate Federal regulations when there are opportunities for reducing procedural or paperwork burdens without reducing the benefits needed by society.

Enforcement of environmental laws has been, and will continue to be, my first priority. This is expected by the Congress and citizens, and increasingly by the vast majority of industrial firms who have made the necessary capital and operating investments to achieve compliance. This Regional Office has been a leader in developing cases for both administrative and civil and criminal enforcement, exceeding by far all other Regions in this effort. While I do not believe that the number of enforcement cases developed should be a substitute measure for the degree of compliance achieved, it is surely one of several indicators to be observed. When viewed in conjunction with compliance rates, the enforcement tracking system that we have instituted and the level of staff resources devoted to the program, I am proud of our enforcement accomplishments and the system now in place for continued achievement.

As Regional Administrator, I have also worked hard to strengthen our relationship with States, for two reasons: to improve our support of programs that have been largely delegated to States (such as construction grants, wastewater discharge permits, water supply, and growing portions of air and hazardous waste management) and to delegate additional programs and management responsibilities to State agencies that have demonstrated the capability to accept them. This evolution of increased State responsibility, backed by technical and financial support at the Federal level, was contemplated by Congress for most of EPA's programs and generally leads to more efficient and more responsive implementation.

A good example which illustrates this point is hazardous waste management. Under the Resource Conservation and Recovery Act, the national hazardous waste program has two primary aims: cradle to grave tracking of hazardous waste and regulation of hazardous waste management facilities, through permitting and enforcement. During the past year, all States in this Region entered into cooperative arrangements for implementation of many parts of the programs, with additional delegations to be made during the next year. Maryland, for example, after operating under the cooperative agreement, is expected to assume almost all hazardous waste supervision responsibilities by the end of 1983. The State will probably pursue full authorization during 1984. Further, EPA and the States have conducted assessments and inspections at well over 200 potential hazardous waste sites to identify any threats to public health and the environment. Enclosed is the most recent version of Maryland's portion of our tracking system. Federal action under Superfund is providing emergency and remedial cleanups in many locations in this Region, largely as a result of the failure to adequately regulate hazardous waste management in the past.

The first complete dumpsite cleanup in the nation was accomplished during the past year in Maryland, and more than ten other sites in the Region are at varying stages of remedial action. I expect a substantial number of additional sites to begin cleanup under Superfund during the next year, as the national priority cleanup list increases from 160 to 400 sites. The cooperation provided by the States has been outstanding and the States have, in fact, assumed primary management responsibility for a majority of the sites nationwide. I also want you to know that EPA is placing a great deal of effort in community relations at these sites because of the very understandable concerns expressed by local officials and citizens whose communities have a threatening site. I believe that the Superfund cleanup program in off to a vigorous start and is working well, in close cooperation with the States.

Communication with your constituents, industry and local officials about these and other environmental matters has expanded greatly during the past year. I and members of my staff have made a concerted effort to meet with as many groups as our schedules permitted, both to discuss important decisions pending before the Agency and to solicit views and information from a diversity of sources. I hope these active efforts are resulting in more informed correspondence on environmental issues written to you by your constituents.

In conclusion, the past year has been a challenge for the Agency and the States in improving the delivery of effective environmental protection programs. I believe we have come a long way in meeting this challenge, and want to assure you of my continued desire to respond fully and promptly to your needs. Please let me know of any way that I can be of assistance to you.

Sincerely yours.

PETER N. BIBKO,
Regional Administrator.

U.S. SENATE,
Washington, D.C., February 1, 1983.

Mr. PETER N. BIBKO,
Regional Administrator, U.S. Environmental Protection Agency,
Philadelphia, Pa.

DEAR MR. BIBKO: Thank you for your letter of December 16, 1982, recounting your accomplishments during your first year as Regional Administrator. I share your commitment to enforcement of our nation's environmental laws and your efforts to regulate using incentives that are cost-effective to the private sector.

I was hoping that your letter would address the accomplishments of the Chesapeske Bay Program or your goals for producing the Management Report in a timely fashion. The Congressional intent on the nature of this Management Report could not have been clearer. I will not repeat the legislative history of the appropriations for the Bay program here, since I am confident your general counsel is fully familiar with it.

My staff reported to me on your meeting in Annapolis on December 22. I am grateful that you have taken a personal interest in seeing the Bay Program through its transition phase to an implementation program. I reiterate my concerns as well as those of several of my colleagues from Maryland and Virginia about the progress of the Bay Program. The EPA Chesapeake Bay Program has been a shining example of good intergovernmental cooperation and successful rapport with the many private businesses, industries, and research institutions on the Bay.

The states of Maryland and Virginia have been brought together in a closer working relationship for the common protection of the Bay's waters. And the State of Pennsylvania is also being drawn into this partnership. Concurrently, the program has brought the Agency into a closer partnership with those states.

Private industry, the agricultural community, watermen, and scientists all have been brought together along with a well-informed Bay citizen community to grapple with the program's research findings and reach some common conclusions about future steps to maintain Bay water quality.

The public participation program deserves the credit for successfully bringing such a diverse group of Bay users to a common table. I would hope we could build on that process in devising a workable management entity for the Bay which would continue the EPA presence in the form of a permanent Annapolis Office of Chesapeake Bay Liaison, to which you previously have committed yourself.

It is, therefore, necessary that the five full-time permanent positions for the Bay program be retained in Annapolis. These positions apparently have been lost to the region in a year when the Congress appropriated funds for 350 positions above the Agency's fiscal year 1983 request and when the Bay Program is in transition from research to implementation. I would appreciate the current staffing for the Annapolis office by title, name of employee, type of position, (e.g., full-time permanent; temporary; contractor) and any current vacancies.

It is not sufficient to loan personnel from the Philadelphia office to Annapolis. Nor is it sufficient to assign personnel part-time to the program who have other ongoing responsibilities. The program is at a critical juncture. Management strategies and a proposed management entity should be discussed and honed now in the Bay community.

The hiatus of the past three months without a Director of Deputy Director has seriously hampered progress on completion of the principal end-product of the program: the Management Report. We in the Congress have been patient in foregoing deadlines for such work products over the years in the interest of professionalism.

Last year, at my instigation, Congress appropriated funds for a one-year extension to complete the Management and Characterization Reports. Yet neither has been produced. Now we find ourselves in yet a second year extension, which Congress clearly intended to be an implementation year for management strategies, the setting in place of management organization and an annual water quality sampling program. The agency, however, apparently views fiscal year 1983 as another year to finish the Management and Characterization Reports. This is simply unacceptable.

It seems clear, in light of the tasks mandated for fiscal year 1983 by the Congressional appropriation, that the agency lacks the staff, the time, and the expertise to devise management strategies and the organizational arrangement to keep all the actors at the table. For that reason, I believe it would be in the best interests of the program and all parties concerned to contract with a person(s) or firms(s) expert in The Clean Water Act and successful clean water strategies for other major estuarine bodies and with organization and management expertise.

The Bay community, the states, and the Congress have been patient long enough. Suggested remedies for the water quality problems of the Chesapeake should be the subject of full and thoughtful debate right now.

To ensure that such remedies are shared with the appropriate Bay parties I also suggest you engage the help of an environmental mediation service. The affected states, federal agencies, and private user groups who are affected by management strategies or who may have to implement those strategies deserve sufficient lead time to weigh strategies, costs, and benefits. I view the use of an environmental mediation service as a means to facilitate public dialogue and build a consensus on workable strategies for the Bay.

Senator Stafford, Chairman of the Committee on Environment and Public Works, and I will convene joint hearings on the findings of the Bay program and their applicability to other estuarine bodies this winter. In preparation for those hearings, I ask that you take appropriate steps to ensure that the findings of this $27 million research effort are translated into workable strategies in a timely fashion.

I look forward to hearing from you.

Sincerely,

CHARLES McC. MATHIAS, Jr.,
U.S. Senator.

[Excerpts from S. 431, "Clean Water Act Amendments of 1983."]

[S. 431, 98th Cong., 1st sess.]

A BILL To amend the Clean Water Act, as amended, to authorize funds for fiscal years 1983, 1984, 1985, 1986, and 1987, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

SECTION 1. This Act may be cited as the "Clean Water Act Amendments of 1983".

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CHESAPEAKE AND NARRAGANSETT BAYS

SEC. 3. Title I of the Clean Water Act is amended by adding at the end thereof the following new section:

"CHESAPEAKE AND NARRAGANSETT BAYS

"SEC. 117. (a) The Administrator shall, at the request of the Governor of a State affected by the interstate management plan developed pursuant to the Chesapeake Bay program, make a grant for the purpose of implementing the management mechanisms contained in such plan if such State has, within one year after the date of enactment of the Clean Water Act Amendments of 1983, approved and committed to implement all or substantially all aspects of such plan.

"(b) Federal grants under subsection (a) of this section shall not exceed 55 per centum of the costs of implementing the interstate management plan in any year and shall not be made to any State for any fiscal year when the expenditure of non-

Federal funds by such State is less than 45 per centum of the costs of implementing the interstate management plan during such fiscal year.

"(c) The Administrator shall continue the Chesapeake Bay program to:

"(1) continue to assess the relationship between point and nonpoint source pollution and the impact of such pollution on water quality; and

"(2) do further research on the impact of pollutant loadings, particularly nutrients, on the fisheries resources of the bay. Special attention shall be given to the striped bass.

"(d) The Administrator shall immediately begin to assess the principal factors having an adverse effect on the environmental quality of the Narragansett Bay, as perceived by both scientists and users, and to direct and coordinate, subsequent to a review of presently ongoing research, research and abatement programs that will most efficiently address those facotrs. The Administrator shall also: analyze all environmental sampling data presently being collected on the Narragansett Bay and suggest and undertake methods for improving such data collection; establish a continuing capacity for collecting, storing, analyzing, and disseminating such data; institute a sampling program where deficiencies are found to exist in present sampling programs; determine what units of government have management responsibility for the environmental quality of the bay and define how much management responsibility can best be structured so that communication and coordination can be improved not only as between the respective units of government but also between those units and research and educational institutions, and concerned groups and individuals on the bay.

"(e) There are hereby authorized to be appropriated the following sums, to remain available until expended, to carry out the purposes of this section:

"(1) $10,000,000 per fiscal year for the fiscal years ending September 30, 1984, September 30, 1985, September 30 1986, and September 30, 1987 for grants to States under subsection (a);

"(2) $3,000,000 per fiscal year for the fiscal years ending September 30, 1983, September 30, 1984, September 30, 1985, September 30, 1986, and September 30, 1987 to carry out subsection (c); and

"(3) $1,500,000 per fiscal year for the fiscal years ending September 30, 1983, September 30, 1984, September 30, 1985, September 30, 1986, and September 30, 1987 to carry out subsection (d).".

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